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VOLUME 8

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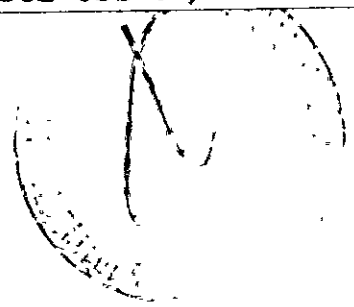
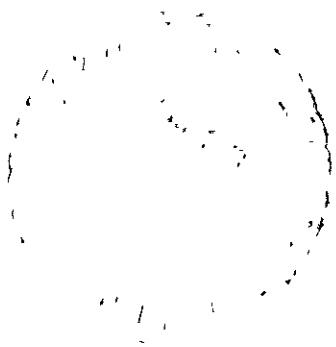




GODDARD SPACE FLIGHT CENTER

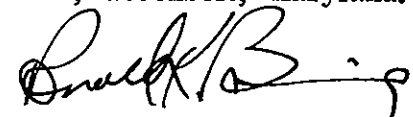
GREENBELT, MARYLAND

FOREWORD

This is the eighth volume of a series of catalogs to be published by the National Aeronautics and Space Administration to document data acquired from the Nimbus 6 meteorological satellite. This volume covers the period from 1 September 1976 through 31 October 1976. Subsequent catalogs will contain documentation for succeeding periods throughout the useful lifetime of Nimbus 6.

Background information concerning the Nimbus 6 meteorological satellite system and a description of the experiments and data formats has been published separately in The Nimbus 6 User's Guide. Post-launch User's Guide information changes and corrections are included in the data catalogs. The Nimbus 6 catalogs present the type of data available, anomalies in the data, if any, and geographic location and time of the data.

The assembly and editing of this catalog was accomplished by the Management and Technical Services Company (MATSCO), Beltsville, Maryland, under contract number NAS5-23740 with the Goddard Space Flight Center, NASA, Greenbelt, Maryland.



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SECTION 1

SUMMARY OF OPERATIONS

1.1 Introduction

Nimbus 6 was successfully launched from the Western Test Range, Vandenberg Air Force Base, California at 08 hr. 12 min. 00 sec. GMT on 12 June 1975. The orbit was nearly circular at 1093 x 1105 km. Satellite operations from launch through 14 July (orbit 425) consisted of engineering evaluation of all spacecraft systems. As a result of that effort, data reception, accountability and processing were intermittent during that period. Therefore, Volume 1 in this catalog series mainly reflects documentation from orbit 426 (14 July) through orbit 1082 (31 August). During orbit 4905 (12 June 1976), Nimbus 6 successfully completed one year of operations. Table 1-1 is a summary of the documentation for each Nimbus 6 Data Catalog volume.

Because the spacecraft power is limited, all experiments are not on at the same time. During this catalog period the THIR*, ESMR, ERB, PMR and TWERLE (Random Access Measurement System) were recorded for almost all orbits. Normally, the procedure has been to have the ERB and ESMR split their time; however, a new schedule has been implemented and both sensors are operating simultaneously. ESMR data quality from both Horizontal and Vertical channels is good through orbit 6183 (15 Sept.). After orbit 6184 (15 Sept.), the Horizontal channel output went to zero and telemetry information indicates a failure of the Ferrite Dicke switch. The Vertical channel remains in good working condition with data being collected and processed. These data are being used in the analysis of hurricanes and tropical storms. The SCAMS instrument functioned through orbit 4751 (31 May); after the above mentioned orbit, the

*THIR sensor failed during orbit 6731

Table 1-1

Nimbus 6 Catalog Documentation Summary

Volume	Dates	Orbits
1	12 June 75-31 Aug. 75	1-1082
2	1 Sept. 75-31 Oct. 75	1083-1900
3	1 Nov. 75-31 Dec. 75	1901-2717
4	1 Jan. 76-29 Feb. 76	2718-3521
5	1 Mar. 76-30 Apr. 76	3522-4338
6	1 May 76-30 Jun. 76	4339-5155
7	1 July 76-31 Aug. 76	5156-5985
8	1 Sept. 76-31 Oct. 76	5986-6802

SCAMS instrument ceased to function due to a scan mechanism anomaly (see Section 5.3 this catalog). The HIRS instrument failed during orbit 4697 (27 May) when a filter chopper motor anomaly occurred. As a precautionary measure, the HIRS subsystem was turned off. The T&DRE was not operational during this catalog period. Due to the depletion of methane in the cryogenic cooler, the last useable data from the LRIR experiment was received during orbit 2801 (7 January). The on-off cycle for each experiment is shown in Table 2-2 in Section 2 of this catalog.

Because of an anomaly in the functioning of the High Data Range Storage subsystem (HDRSS) B, first noted during orbit 33 (14 June), HDRSS B has been limited to 65 minutes of record capability (out of a possible 120 minutes). With only HDRSS B available for full-time use, there are occasional periods when global experiment coverage is not obtained. (These occur when the Orroral, Australia STDN station is not available for playback of recorded experiment data.) The areas not covered are usually over the western part of the Pacific Ocean and/or the eastern part of the Atlantic Ocean. During orbit 4641 the HDRSS A recorder failed to record. Prior to the above date, HDRSS A was successfully used operationally 120 minutes every other orbit with HDRSS B providing 65 minutes of alternate coverage. Complete failure of HDRSS A occurred during orbit 4713 and despite many attempts to engage the system in a record mode, it has not recorded since orbit 4713 (28 May). The areas most affected by the lack of HDRSS A experiment coverage are the latitudes north of the Equator during the nighttime orbital passes. The daytime coverage remains virtually unchanged with the exception as noted in the above paragraph.

The pitch of the Nimbus 6 satellite has been made to alternate between +2.0 degrees, +0.6 degrees, and 0.0 degrees since launch. Table 1-2 lists the orbits when each pitch position was used.

A positive pitch angle of 0.6 degrees moves the nadir-looking position 11.5 kilometers ahead of the subsatellite point. A positive pitch angle of 2.0 degrees moves the nadir-looking position 38.3 kilometers ahead of the subsatellite point.

At these pitch angles, a scanner-type instrument no longer scans the earth along a great circle arc through the subpoint, but scans along the small circle formed by the intersection of the scan plane with the earth. Since the plane of the small circle is tilted with respect to the nominal scan plane, points on the arc are displaced farther from the great circle as the scan angle increases. As noted above, a pitch angle of 0.6 degrees causes a displacement of 11.5 kilometers at nadir, but when the scanner turns 45 degrees away from nadir the displacement increases slightly to 12.8 kilometers. Similarly, for a 2.0 degree pitch the displacement is 38.3 kilometers at nadir and increases to 42.6 kilometers at a 45 degree scan angle. Thus, although the instrument records in lines normal to the orbit plane (in the absence of yaw) the perpendicular displacement from the perfect-attitude scan line is not uniform across the scan line.

Subsections 1.2 through 1.10 of this catalog summarize the operational highlights of the individual experiments, present preliminary experiment results, and call attention to known data anomalies. Section 2 lists the on-off times for each experiment and provides a method for determining the geographical coverage of each experiment. Section 3 shows selected ESMR images, and Section 4 presents THIR montages. Section 5 presents corrections to The Nimbus 6 User's Guide.

Table 1-2

Pitch Positions for Nimbus 6
01 September through 01 November 1976 (Orbits 5998-6807)

Pitch Changes			Pitch Bias	
Date (1976)	Orbit and STDN	Time (GMT)	+0.6°	+0.0°
1 Sept.	5998A*	2223	X	
1 Sept.	6005A	1108		X
2 Sept.	6011A	2142	X	
3 Sept.	6018A	1030		X
3 Sept.	6024A	2102	X	
4 Sept.	6031A	0946		X
4 Sept.	6037A	2017	X	
5 Sept.	6044A	0905		X
5 Sept.	6052A	2309	X	
6 Sept.	6059A	1154		X
6 Sept.	6065A	2228	X	
7 Sept.	6072A	0928		X
7 Sept.	6077A	2000	X	
8 Sept.	6083R*	0708		X
8 Sept.	6092A	2252	X	
9 Sept.	6100A	1323		X
10 Sept.	6106W*	0008	X	
10 Sept.	6112A	1056		X
10 Sept.	6119A	2315	X	
11 Sept.	6125A	1014		X
11 Sept.	6132A	2232	X	
12 Sept.	6138A	0933		X
12 Sept.	6144A	2003	X	
13 Sept.	6150R	0710		X
13 Sept.	6157A	1922	X	
14 Sept.	6163R	0628		X
14 Sept.	6172A	2213	X	
15 Sept.	6179A	1057		X
16 Sept.	6189R	0505	X	
16 Sept.	6194A	1350		X
17 Sept.	6200W	0035	X	
17 Sept.	6205A	0939		X
17 Sept.	6212A	2154	X	
18 Sept.	6218A	0853		X
19 Sept.	6229R	0453	X	

Table 1-2 (continued)

Pitch Change			Pitch Bias	
Date (1976)	Orbit and STDN	Time (GMT)	+0.6°	+0.0°
19 Sept.	6234A	1332		X
20 Sept.	6240A	0006	X	
20 Sept.	6245A	0923		X
20 Sept.	6253A	2325	X	
21 Sept.	6258A	0837		X
21 Sept.	6266A	2241	X	
22 Sept.	6271A	0756		X
23 Sept.	6282W	0336	X	
23 Sept.	6286A	1047		X
23 Sept.	6293A	2302	X	
24 Sept.	6298A	0817		X
24 Sept.	6317A	1809	X	
25 Sept.	6323R	0514		X
25 Sept.	6332A	2059	X	
26 Sept.	6337R	0619		X
26 Sept.	6346A	2203	X	
27 Sept.	6349R	0352		X
27 Sept.	6359A	2122	X	
28 Sept.	6365A	0822		X
28 Sept.	6373A	2228	X	
29 Sept.	6377R	0601		X
30 Sept.	6398A	1916	X	
1 Oct.	6403R	0438		X
3 Oct.	6424A	1754	X	
4 Oct.	6433A	1012		X
5 Oct.	6452A	2002	X	
6 Oct.	6457R	0523		X
7 Oct.	6480A	2212	X	
8 Oct.	6484R	0547		X
8 Oct.	6488A	1246	X	
8 Oct.	6488A	1247		X
9 Oct.	6499A	0833	X	
10 Oct.	DATA MISSING			X
10 Oct.	6520A	2156	X	
11 Oct.	6525R	0712		X
12 Oct.	6547A	2219	X	
13 Oct.	6551R	0552		X
14 Oct.	6573A	2052	X	

Table 1-2 (continued)

Pitch Change			Pitch Bias	
Date (1976)	Orbit and STDN	Time (GMT)	+0.6°	+0.0°
15 Oct.	6577R	0428		X
16 Oct.	6600A	2118	X	
17 Oct.	6604R	0453		X
18 Oct.	6627A	2142	X	
19 Oct.	6631R	0516		X
20 Oct.	6654A	2205	X	
21 Oct.	6658R	0540		X
22 Oct.	6681A	2228	X	
23 Oct.	6685R	0603		X
24 Oct.	6708A	2251	X	
25 Oct.	6711R	0439		X
26 Oct.	6738R	0502	X	
27 Oct.	6742A	1202		X
29 Oct.	6775A	2255	X	
30 Oct.	6780A	0807		X
31 Oct.	6803O*	0221	X	
1 Nov.	6807A	0831		X

*A = Fairbanks, Alaska; O = Orroral, Australia, R = Rosman, North Carolina, W = Winkfield, England

The user is referred to The Nimbus 6 User's Guide for a complete description of each experiment and to Section 1.7 of that Guide for the requesting procedure and sources for all data. Sections 2, 3, and 4 of this Data Catalog should help users select data to meet their needs.

1.2 The Temperature Humidity Infrared Radiometer (THIR) Subsystem

The quality of the THIR data from both channels (11.5 μm and 6.7 μm) and telemetry have been good since launch until orbit 6732 (26 October) when the THIR Radiometer mirror ceased to function. Thus, daily world montages of the THIR as presented in Section 4 of this catalog will not include THIR data for the period 26 October through 31 October. All processed THIR film is archived and available through the National Space Science Data Center, as is all available THIR digital data. The THIR digital products are processed to final format only on request. Users should refer to Section 4 of this catalog, and to Sections 1.7 and 2.4 of The Nimbus 6 User's Guide for a discussion of the formats and procedure to order these products.

1.3 The High Resolution Infrared Radiation Sounder (HIRS) Experiment

During this reporting period, the HIRS instrumentation system did not operate. The last operational data was obtained during orbit 4697 (27 May) when a subsystem anomaly (Filter Chopper motor failed) occurred; causing the subsystem to be turned off as a precautionary move. Subsequent operations after orbit 4697 are to be construed as evaluations of the subsystem anomaly. Valid operational data is not available after the above date (27 May 1976).

1.4 The Scanning Microwave Spectrometer (SCAMS) Experiment

The instrument ceased functioning during orbit 4751 (31 May) due to jamming of the scan mechanism. Scan problems as discussed in Volume 5 first developed during orbit 3862 (26 March), when the drive belt for channel 2 (31.65 z) antenna started slipping. The loss of data from channel 2 prevented retrieval of atmospheric water vapor and liquid water during said catalog period; the inversion matrices for atmospheric temperature were redefined to exclude channel 2, and temperature retrievals were continued until 31 May. (Since this last date, various improvements have been made with respect to data retrieval, calibration of oxygen band channel and inversion of H_2O channels. For a current summary of events as relates to SCAMS, see Section 5.3.)

1.5 The Electrically Scanning Microwave Radiometer (ESMR) Experiment

The ESMR performance continued to be satisfactory through orbit 6183 (15 September). After orbit 6184 (15 September), the Horizontal channel output went to zero and telemetry information indicates a failure of the Ferrite Dicke switch. There was no effect of data from the Vertical channel. Data are being collected and processed with the EIS display updated to process only the Vertical channel data. See Section 3 for a new table of values and selected ESMR images for this catalog period.

1.6 The Earth Radiation Budger (ERB) Experiment

The Solar and wide-angle Earth-Flux channels continued to operate in the non-scanning mode. The data quality is good and the ERB sensor is operating full-time as power permits. The scanning channels operate only in the nadir position because of mechanical scan problems.

1.7 The Limb Radiance Inversion Radiometer (LRIR) Experiment

The last useable data from the LRIR was received during orbit 2801 (7 January). By this orbit the methane used to cool the detector was depleted and the telemetry indicating the detector temperature was saturated at 73.6°K. The ammonia temperature was constant until orbit 2787 (6 January) when it began to increase and then became erratic-varying from 145.6°K to 150.0°K. At orbit 2802 (7 January) the temperature of 145.6°K began increasing and by orbit 2806 it was at 165.7°K, when the LRIR was turned off. Since the above date, the experiment has been turned on during several occasions

to record the ammonia temperature. The last reading, orbit 5014 (20 June) indicated that the cryogen shield temperature reached telemetry saturation at 263°K. With all of the coolants (Methane-ammonia) depleted and useable experiment data non-existent; the LRIR is expected to be in a permanent non-operational mode even though the instrument and telemetry are completely functional.

1.8 The Pressure Modulator Radiometer (PRM) Experiment

The PMR performance was satisfactory during this reporting period. The instrument was on continuously. Data quality was good.

From orbit 1727 (19 October) through orbit 5526 (28 July), channel 1 operated in nadir-looking mode. This was necessary because in the scan mode this channel appears to operate between ±10° from nadir rather than ± 15° from nadir. During orbit 5526, channel 1 was enabled for 5 minutes and then 60 minutes during orbit 5594 (2 August). Since orbit 5633 (5 August) channel 1 scan operations have been satisfactory. Data quality from both channels are satisfactory. All acquired data was routinely transmitted from GSFC to the experimenter at Oxford, England.

1.9 The Tropical Wind Energy Conversion and Reference Level Experiment (TWERLE)/ Random Access Measurement System (RAMS)

With the successful conclusion of the TWERLE Experiment, data transmission to the National Center for Atmospheric Research was terminated on 10 August 1976. A summary report detailing various aspects of the experiment has been published and may be found in the following publication authored by: Julian, P., Massnon, M., Levanson, N.,: The TWERL Experiment, Bulletin of the American Meteorological Society, vol. 58, no. 9, September 1977, pp. 936-948.

Since the TWERLE Experiment and the Random Access Measurement System (RAMS) were an integral part of the total operations; the RAMS subsystem continues to be used to track and monitor various experimental platforms. During this catalog period, the RAMS subsystem search and rescue operations capability was tested during orbits 6088 (8 September) through 6181 (15 September).

As of 12 June 1976, (Nimbus 6 one year anniversary) over 700 platforms had been activated. Table 1-3 shows distribution of these platforms. The full address of each experimenter is given in Table 9-2 in the Nimbus 6 User's Guide. (Corrected addresses for many of these experimenters, and addresses for several new experimenters, are given in Section 5.8 of this catalog.) Anyone interested in results from a particular experiment should write to the principal investigator for that experiment.

1.10 The Tracking and Data Relay Experiment (T&DRE)

The T&DRE performance was satisfactory during this catalog period. The orbits when the T&DRE was operated are listed in Table 2-2 in Section 2. Significant accomplishments of T&DRE are discussed in Data Catalog Volume 1, Section 1.10.

Table 1-3

TWERLE Platform Activity as of 12 June 1976

Principal Investigator	Platform			
	Type	Active	Inactive	Total
Dr. Paul R. Julian Boulder, Colorado	Balloons	81	275	356
Professor Norbert Untersteiner Seattle, Washington	Ice Buoys	26	6	32
Dr. Hanson Miami, Florida	Drifting Buoys	12	33	45
Mr. Vincent Lally Boulder, Colorado	Balloons	0	21	21
Dr. P. Richardson Woods Hole, Massachusetts	Drifting Buoys	0	1	1
Mr. Arnold Gordon Palisades, New York	Drifting Buoys	4	20	24
Mr. Tim P. Barnett La Jolla, California	Drifting Buoys	3	13	16
Mr. Robert Kee Washington, D. C.	Drifting Buoys	0	2	2
Mr. R. E. Vockeroth Ontario, Canada	Buoys	2	0	2
Mr. Jack Lentfer Anchorage, Alaska	Polar Bears	1	1	2
Mr. B. M. Buck Santa Barbara, California	Drifting Buoys	3	2	5
Mr. Fernando DeMendonca Sao Paulo, Brazil	Buoys	0	2	2
Mr. George Cresswell Cronulla, Australia	Drifting Buoys	9	5	14

Table 1-3 (continued)

Principal Investigator	Platform			
	Type	Active	Inactive	Total
Dr. A. Dyer Mordialloc, Australia	Drifting Buoys	0	3	3
Professor Lacombe Paris, France	Drifting Buoys	1	4	5
Mr. C. K. Jenson/J. Nordo Oslo, Norway	Buoys	2	0	2
Mr. T. Haegh/T. Vinje Oslo, Norway	Ice Buoys	5	5	10
Mr. Frank Anderson Congella, South Africa	Drifting Buoys	5	5	10
Professor H. Stommel Cambridge, Massachusetts	Drifting Buoys	0	6	6
Dr. A. D. Kirwan, Jr. College Station, Texas	Drifting Buoys	0	12	12
Mr. H. N. Brann Melbourne, Australia	Drifting Buoys	1	5	6
Professor Morel Paris, France	Balloons & Buoys	0	47	47
Dr. John Garrett Victoria, B. C. Canada	Drifting Buoys	2	33	35
Professor Tchernia Paris, France	Drifting Buoys	3	2	5
Mr. R. R. Dickson Lowestoft, Suffolk, U.K.	Drifting Buoys	1	5	6
Dr. Michael Hall Bay St. Louis, Mississippi	Buoys	9	10	19

Table 1-3 (continued)

Principal Investigator	Platform			
	Type	Active	Inactive	Total
Mr. David Thomas, Jr. Hampton, Virginia	Buoys	0	6	6
Dr. J. Williamson La Jolla, California	Balloons	0	1	1
Mr. J. C. O'Rourke Calgary, Canada	Buoys	2	0	2
Mr. Robert Oehlkers Madison, Wisconsin	Buoys	2	8	10
Capt. E. A. Delaney Washington, D. C.	Buoys	1	0	1
Dr. R. H. Goodman Alberta, Canada	Buoys	1	1	2
Dr. D. Halpern Seattle, Washington	Buoys	2	1	3
TOTALS		178	535	713

SECTION 2

THE ORBITAL ELEMENTS AND DATA AVAILABILITY ON-OFF TIMES

This section presents the Nimbus orbital elements for selected epochs, tabulates the time when each of the experiments was recording data, and gives procedures for determining the time and orbit when the satellite is over a given geographical area (and thus determining the location of coverage for each experiment).

The Nimbus 6 Brouwer Mean orbital elements for selected epochs during September and October 1976 are listed in Table 2-1.

As previous elements indicated, the orbital period was slowly increasing (approximately 22 milliseconds per day) and the satellite was moving into a slightly higher orbit. This effect has been attributed to the thrust given by the solid methane and ammonia sublimating from the LRIR solid cooler. Since 26 May, the orbital period appears to have stabilized and has remained constant at 107.418 minutes. Thus with the depletion of the solid methane and ammonia now complete; the predicted (Vol. 4, Sec. 2) stabilization of the orbital period by mid-1976 has been confirmed. The elements listed in Table 2-1 do not account for this effect. When these elements are used more than seven days from epoch, location errors of greater than 60 km (about ten seconds of time), can be expected. If more accurate ephemeris are needed for a specific time period, write to the Nimbus Project, Code 430, Goddard Space Flight Center, Greenbelt, Maryland 20771.

The data availability on-off times, listed in Table 2-2, are the times when the data from each experiment was recorded on a HDRSS and processed through the Meteorological Data Handling System (MDHS) at Goddard Space Flight Center. The Table 2-2 header labels and their meaning are as follows:

- INT ORBIT AND STDN

  The satellite orbit number in progress when the satellite data is relayed to a ground station is called the interrogation orbit (INT ORBIT). The ground stations receiving the Nimbus 6 satellite data are part of the Spacecraft and Tracking Data Network (STDN). There are four STDN stations receiving Nimbus 6 experiment data: Fairbanks, Alaska (denoted by the letter "A"); Rosman, North Carolina (R); Orroral, Australia (O); and Winkfield, England (W).

- HDRS

  The HDRS (High Data Rate Storage System - HDRSS) is the acronym for the satellite tape recorder system. Recorder "A" or "B" (or both) is played back during each STDN station interrogation.

Table 2-1

Nimbus 6 Brouwer Mean Orbital Elements for
September and October 1976

Epoch	GMT	10 Sept. 76 00 00 00	27 Sept. 76 00 00 00	11 Oct. 76 00 00 00	27 Oct. 76 00 00 00
Semi-Major Axis	Km	7485.367	7485.364	7485.361	7485.355
Eccentricity		.000752	.000806	.000840	.000863
Inclination	Degrees	99.947	99.947	99.947	99.947
Argument of Perigee	Degrees	217.165	181.113	148.536	113.365
Right Ascension of Ascending Node	Degrees	164.360	181.033	194.762	210.454
Height of Perigee	Km	1101.57	1101.16	1100.91	1100.73
Height of Apogee	Km	1112.83	1113.24	1113.48	1113.65
Anomalistic Period	Minutes	107.41800	107.41796	107.41788	107.41774
Motion of Perigee	Deg. per Day	-2.4203	-2.4203	-2.4203	-2.4203

- HDRSS TIME ON-OFF

  The HDRSS ON and OFF times are given in GMT to the nearest minute. The ON time is the time the (A or B) HDRSS begins recording experiment measurements; the OFF time is when it stops recording. Usually, the ON and OFF times occurs when the satellite is within acquisition range on one of the four STDN stations. The time span between each ON and OFF usually covers part of two DATA ORBITS.

- LRIR, THIR, TDRE, SCAM, ESMR, ERB, PMR, TWRL, HIRS

  These are the acronyms for each of the experiments on Nimbus 6. (Acronyms longer than four letters have been shortened.) The column beneath each acronym contains a series of "X's" or "blanks." Each "X" in the column indicates that the data for that experiment was processed at GSFC.

A "blank" usually indicates that the experiment was turned off for the HDRSS ON-OFF in that line. A single "blank" in the middle of a series of "X's" frequently means that the experiment was on during that time span but the data has not been processed, or is unavailable for any of several reasons.

- DATA ORBIT

  A DATA ORBIT begins when the satellite crosses the equator heading in a northbound direction, and ends after the satellite has circled the earth and is about to cross the equator heading in a northbound direction. The DATA ORBIT number increases by one with each successive northbound equator crossing. The ASCENDING NODE and DESCENDING NODE information is referenced to the DATA ORBIT number.

- ASCENDING NODE TIME (and) LONG

  The ASCENDING NODE is the point in the orbit when the satellite crosses the equator heading in a northbound direction. The TIME of ASCENDING NODE is given in hours (HR), minutes (MN), and seconds (SS) GMT. The longitude (LONG) of ASCENDING NODE is given to the nearest tenth of a degree of east (E) or west (W) longitude. For Nimbus 6, the ascending node crossings always occur during the daytime portion of the orbit at approximately 11:45 a.m. local time.

- DESCENDING NODE TIME (and) LONG

  The DESCENDING NODE is the point within a DATA ORBIT when the satellite crosses the equator heading in a southbound direction. The TIME of DESCENDING NODE is given in hours (HR), minutes (MN), and seconds (SS) GMT. The longitude (LONG) of DESCENDING NODE is given to the nearest degree of east (E) or west (W) longitude. The descending node crossings always occur during the nighttime portion of each orbit at approximately 11:45 p.m. local time.

Table 2-2 together with the World Map (Figure 2-1) and the vellum Subsatellite Tracks Overlay attached to the back of this catalog, can be used to determine approximate geographic coverages and times for experiment data that the user may wish to order. The Overlay contains 14 correctly spaced satellite subpoint tracks, which end at the approximate earth day-to-night transitions. The tracks contain time ticks spaced 5 minutes apart, approximately annotated at the edge of the overlay and referenced to the equator.

A Subsatellite Tracks Overlay is correctly oriented with the World Map when the ascending or descending node line (equator) on the overlay coincides with the 0-degree latitude line (equator) of the World Map.

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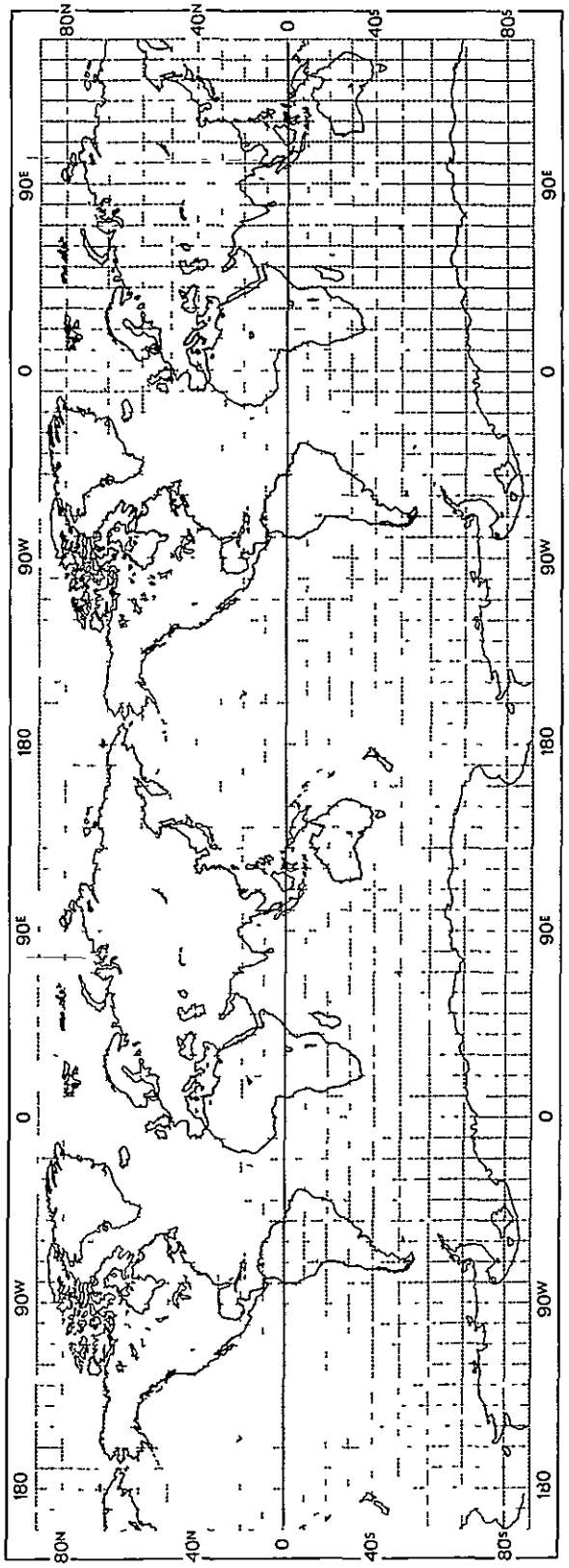

Figure 2-1. World Map

Orbital coverage for all orbits on any day is then determined by placing one of the orbit tracks on the overlay at its appropriate ascending node (for daytime data) or descending node (for nighttime data) longitude. (The nodes for each day are listed in Table 2-2.) The orbit track (or tracks) which covers the area of interest is readily apparent.

The time (GMT) of satellite passage over an area of interest is calculated by adding or subtracting the minutes from equator crossing (as determined from the overlay) to the appropriate node time (derived from Table 2-2). For daytime orbits, time is added to the ascending node for areas north of the equator, and subtracted from the ascending node for areas south of the equator. For nighttime orbits, time is subtracted from the descending node for areas north of the equator, and added to the descending node for areas south of the equator.

To determine if an experiment was ON during the calculated orbit and time of interest, the user must first "fit" the calculated time into the corrected ON-OFF interval of an interrogation orbit listed in Table 2-2. Then the user must check the appropriate experiment column for that line. If an "X" is in the column, the experiment was on and the data has been processed. If the column is "blank", the experiment was off (or the data was not processed) and no data for that orbit is available.

An alternate method of determining geographic coverage and time of data is to use the method described in Section 4. The THIR montages and the vellum Location Guides (attached in the back of this catalog) are used to locate the geographical coverage of each orbit of THIR. The data coverage from other experiments will be within the limits of each THIR swath. The TIME of coverage over a particular area is obtained by using Table 4-1 and adding or subtracting this computed time to the appropriate ascending or descending node time given in Table 2-2.

Each request for data should contain, as a minimum, the name of the experiment for which data is requested, the calendar date of the data, the orbit, the time (GMT) interval of the data needed, and the geographic limits of the area of interest. The procedures described above will provide this information.

The nature and format of the data available from each experiment are explained in detail in the respective sections of The Nimbus 6 User's Guide. The appropriate sources for requesting the various data types are listed in Section 1.7 of the same manual.

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
01 SEPTEMBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
5985C	B	2306	0011					X	X	X	X		5986	003241	E167.1	012626	W026.4
5986C	B	0025	0128					X	X	X	X		5987	022013	E140.2	031358	W053.3
5987C	B	0211	0316					X	X	X	X		5988	040745	E113.3	050130	W080.1
5991A	B	0850	1011		X			X	X	X	X		5989	055517	E086.4	064901	W107.0
5992A	B	1037	1159		X			X	X	X	X		5990	074248	E059.6	083633	W133.9
5993A	B	1222	1344		X			X	X	X	X		5991	093020	E032.7	102405	W160.8
5994A	B	1406	1520		X			X	X	X	X		5992	111752	E005.8	121137	E172.3
5995A	B	1549	1711		X			X	X	X	X		5993	130524	E021.1	135908	E145.5
5996A	B	1734	1857		X			X	X	X	X		5994	145256	W048.0	154640	E118.6
5998A	B	2109	2229		X			X	X	X	X		5995	164027	W074.9	173412	E091.7
5999A	B	2301	0015		X			X	X	X	X		5996	182759	W101.8	192144	E064.8
													5997	201531	W128.6	210915	E037.9
													5998	220303	W155.5	225647	E011.1
													5999	235034	E177.6	004419	W015.8

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
02 SEPTEMBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
5999C	B	0013	0116					X	X	X	X		6000	013806	E150.7	023151	W042.7
6000C	B	0132	0234					X	X	X	X		6001	032538	E123.8	041922	W069.6
6001R	B	0314	0417		X			X	X	X	X		6002	051310	E097.0	060654	W096.5
6002R	B	0441	0605		X			X	X	X	X		6003	070041	E070.1	075426	W123.4
6003A	B	0623	0741		X			X	X	X	X		6004	084813	E043.2	094158	W150.3
6004A	B	0809	0930		X			X	X	X	X		6005	103545	E016.3	112929	W177.1
6005A	B	0954	1118		X			X	X	X	X		6006	122317	W010.6	131701	E156.0
6006A	B	1141	1303		X			X	X	X	X		6007	141048	W037.5	150433	E129.1
6007A	B	1325	1447		X			X	X	X	X		6008	155820	W064.3	165205	E102.2
6008A	B	1510	1630		X			X	X	X	X		6009	174552	W091.2	183936	E075.3
6009A	B	1653	1815		X			X	X	X	X		6010	193324	W118.1	202708	E048.5
6011A	B	2027	2147		X			X	X	X	X		6011	212055	W145.0	221440	E021.6
6012A	B	2215	2331		X			X	X	X	X		6012	230827	W171.9	000212	W005.3

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
03 SEPTEMBER 1976

INT ORBIT AND STDN	HDRS	TIME	LR IR	TH IR	TD RF	SC AM	ES MR	E BR	P MR	TW RL	HI RS	ASCENDING NODE DATA ORBIT	TIME HRMNSS	LONG DEGREE	DESCENDING NODE TIME HRMNSS	LONG DEGREE
	HDR S	ON HRMN	OFF HRMN													
6015R	B	0401	0522	X			X	X	X	X		6013	005559	E161.3	014943	W032.2
6016R	B	0546	0708	X			X	X	X	X		6014	024331	E134.4	033715	W059.1
6018A	B	0913	1035	X			X	X	X	X		6015	043102	E107.5	052447	W086.0
6019A	B	1059	1222	X			X	X	X	X		6016	061834	E080.6	071219	W112.8
6020A	B	1245	1406	X			X	X	X	X		6017	080606	E053.7	085950	W139.7
6021A	B	1429	1549	X			X	X	X	X		6018	095338	E026.8	104722	W166.6
6022A	B	1613	1734	X			X	X	X	X		6019	114109	W000.1	123454	E166.5
6024A	B	1757	2107	X			X	X	X	X		6020	132841	W026.9	142226	E139.6
6025A	B	2133	2252	X			X	X	X	X		6021	151613	W053.8	160957	E112.8
												6022	170345	W080.7	175729	E085.9
												6023	185116	W107.6	194501	E059.0
												6024	203848	W134.5	213233	E032.1
												6025	222620	W161.4	232004	E005.2

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
04 SEPTEMBER 1976

INT ORBIT AND STDN	HDRS	TIME	LR IR	TH IR	TD RE	SC AM	ES MR	E BR	P MR	TW RL	HI RS	ASCENDING NODE DATA ORBIT	TIME HRMNSS	LONG DEGREE	DESCENDING NODE TIME HRMNSS	LONG DEGREE
	HDR S	ON HRMN	OFF HRMN													
6026C	B	2337	0041				X	X	X	X		6026	001352	E171.8	010736	W021.7
6027C	B	0155	0259				X	X	X	X		6027	020123	E144.9	025508	W048.6
6028A	B	0336	0441	X			X	X	X	X		6028	034855	E118.0	044240	W075.4
6029A	B	0455	0627	X			X	X	X	X		6029	053627	E091.1	063011	W102.3
6030A	B	0646	0804	X			X	X	X	X		6030	072359	E064.2	081743	W129.2
6031A	B	0834	0953	X			X	X	X	X		6031	091130	E037.4	100515	W156.1
6032A	B	1017	1140	X			X	X	X	X		6032	105902	E010.5	115247	E177.0
6033A	B	1203	1326	X			X	X	X	X		6033	124634	W016.4	134019	E150.2
6034A	B	1349	1507	X			X	X	X	X		6034	143406	W043.3	152750	E123.3
6035A	B	1531	1653	X			X	X	X	X		6035	162138	W070.2	171522	E096.4
6036A	B	1717	1839	X			X	X	X	X		6036	180909	W097.1	190254	E069.5
6037A	B	1902	2025	X			X	X	X	X		6037	195641	W124.0	205025	E042.6
6038A	B	2049	2210	X			X	X	X	X		6038	214413	W150.8	223757	E015.7
6039C	B	2254	2358				X	X	X	X		6039	233145	W177.7	002529	W011.1

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
05 SEPTEMBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E M R B	P R R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
6040C	B	0110	0214					X	X	X	X		6040	011916	E155.4	021301	W038.0
6041R	B	0253	0357		X			X	X	X	X		6041	030648	E128.5	040032	W064.9
6042R	B	0423	0546		X			X	X	X	X		6042	045420	E101.6	054804	W091.8
6043A	B	0605	0720		X			X	X	X	X		6043	064152	E074.8	073536	W118.7
6044A	B	0750	0911		X			X	X	X	X		6044	082933	E047.9	092308	W145.6
6045A	B	0937	1058		X			X	X	X	X		6045	101655	E021.0	111039	W172.4
6046A	B	1132	1243		X			X	X	X	X		6046	120427	W005.9	125811	E160.7
6047A	B	1307	1429		X			X	X	X	X		6047	135159	W032.8	144543	E133.8
6048A	B	1451	1611		X			X	X	X	X		6048	153930	W059.7	163315	E106.9
6049A	B	1635	1757		X			X	X	X	X		6049	172702	W086.5	182046	E080.0
6050A	B	1821	1943		X			X	X	X	X		6050	191434	W113.4	200818	E053.2
6052A	B	2009	2113		X			X	X	X	X		6051	210206	W140.3	215550	E026.3
													6052	224937	W167.2	234322	W000.6

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
06 SEPTEMBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E M R B	P R R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
6052C	B	2310	0014					X	X	X	X		6053	003709	E165.9	013053	W027.5
6053C	B	0029	0132					X	X	X	X		6054	022441	E139.1	031825	W054.4
6055R	B	0342	0504		X			X	X	X	X		6055	041213	E112.2	050557	W081.3
6056R	B	0529	0650		X			X	X	X	X		6056	055944	E085.3	065329	W108.2
6057A	B	0709	0828		X			X	X	X	X		6057	074716	E058.4	084100	W135.0
6058A	B	0854	1015		X			X	X	X	X		6058	093448	E031.5	102832	W161.9
6059A	B	1041	1204		X			X	X	X	X		6059	112220	E004.6	121604	E171.2
6060A	B	1226	1347		X			X	X	X	X		6060	130951	W022.2	140336	E144.3
6061A	B	1411	1532		X			X	X	X	X		6061	145723	W049.1	155107	E117.4
6062A	B	1554	1716		X			X	X	X	X		6062	164455	W076.1	173839	E090.6
6063A	B	1738	1902		X			X	X	X	X		6063	183227	W102.9	192611	E063.7
6064A	B	1926	2048		X			X	X	X	X		6064	201958	W129.8	211343	E036.8
6065A	B	2113	2234		X			X	X	X	X		6065	220730	W156.7	230114	E009.9
													6066	235502	E176.5	004846	W017.0

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
07 SEPTEMBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	C A M	E S M R	E R B	P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
60660	B	2319	0023					X	X	X	X		6067	014234	E149.6	023618	W043.9
6067C	B	0134	0238					X	X	X	X		6068	033005	E122.7	042350	W070.7
6068R	B	0318	0422		X			X	X	X	X		6069	051742	E095.8	061126	W097.6
6069R	B	0446	0609		X			X	X	X	X		6070	070514	E068.9	075858	W124.5
6070A	B	0627	0745		X			X	X	X	X		6071	085246	E042.0	094630	W151.4
6071A	B	0813	0934		X			X	X	X	X		6072	104018	E015.1	113402	W178.3
6072A	B	0959	1122		X			X	X	X	X		6073	122749	W011.7	132134	E154.8
6073A	B	1145	1307		X			X	X	X	X		6074	141521	W038.6	150905	E127.9
6074A	B	1329	1451		X			X	X	X	X		6075	160253	W065.5	165637	E101.1
6075A	B	1513	1635		X			X	X	X	X		6076	175024	W092.4	184409	E074.2
6076A	B	1657	1820		X			X	X	X	X		6077	193757	W119.3	203141	E047.3
6077A	B	1843	2007		X			X	X	X	X		6078	212528	W146.1	221912	E020.4
6078A	B	2031	2153		X			X	X	X	X		6079	231300	W173.0	000644	W006.5
6079A	B	2221	2338		X			X	X	X	X						

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
08 SEPTEMBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	C A M	E S M R	E R B	P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
6079C	B	2334	0038					X	X	X	X		6080	010032	E160.1	015416	W033.4
6080C	B	0054	0157					X	X	X	X		6081	024804	E133.2	034148	W060.2
6082R	B	0405	0527		X			X	X	X	X		6082	043535	E106.3	052919	W087.1
6083R	B	0551	0712		X			X	X	X	X		6083	062307	E079.4	071651	W114.0
6084A	B	0731	0852		X			X	X	X	X		6084	081039	E052.6	090423	W140.9
6085A	B	0917	1040		X			X	X	X	X		6085	095811	E025.7	105155	W167.8
6086A	B	1103	1226		X			X	X	X	X		6086	114542	W001.2	123927	E165.4
6087A	B	1250	1411		X			X	X	X	X		6087	133314	W028.1	142658	E138.5
6088A	B	1433	1554		X			X	X	X	X		6088	152046	W055.0	161430	E111.6
6089A	B	1617	1739		X			X	X	X	X		6089	170818	W081.8	180202	E084.7
6090A	B	1802	1924		X			X	X	X	X		6090	185550	W108.7	194934	E057.9
6091A	B	1950	2100		X			X	X	X	X		6091	204321	W135.6	213705	E031.0
6092A	B	2136	2257		X			X	X	X	X		6092	223053	W162.5	232437	E004.1

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
09 SEPTEMBER 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME		LIR	THIR	TDRE	SCAM	ESMR	SERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
60930	B	2342	0046					X	X	X	X		6093	001825	E170.6	011209	W022.8
6094C	B	0227	0332					X	X	X	X		6094	020557	E143.7	025941	W049.7
6095R	B	0341	0445		X			X	X	X	X		6095	035328	E116.9	044712	W076.6
6096R	B	0510	0632		X			X	X	X	X		6096	054100	E090.0	063444	W103.5
6097A	B	0650	0809		X			X	X	X	X		6097	072832	E063.9	082216	W130.4
6098A	B	0837	0958		X			X	X	X	X		6098	091604	E036.2	100948	W157.2
6099A	B	1022	1145		X			X	X	X	X		6099	110336	E009.3	115720	E175.9
6100A	B	1209	1330		X			X	X	X	X		6100	125107	W017.5	134451	E149.0
6101A	B	1353	1505		X			X	X	X	X		6101	143839	W044.4	153223	E122.1
6102A	B	1537	1658		X			X	X	X	X		6102	162611	W071.3	171955	E095.3
6103A	B	1721	1840		X			X	X	X	X		6103	181343	W098.2	190727	E068.4
6104A	B	1907	2030		X			X	X	X	X		6104	200114	W125.1	205458	E041.5
6105A	B	2054	2216		X			X	X	X	X		6105	214846	W152.0	224230	E014.6
													6106	233618	W178.9	003002	W012.3

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
10 SEPTEMBER 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME		LIR	THIR	TDRE	SCAM	ESMR	SERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
6108R	B	0234	0402		X			X	X	X	X		6107	012350	E154.3	021734	W039.2
6109R	B	0357	0551		X			X	X	X	X		6108	031122	E127.4	040505	W066.1
6111A	B	0754	0915		X			X	X	X	X		6109	045853	E100.5	055237	W092.9
6112A	B	0934	1103		X			X	X	X	X		6110	064625	E073.6	074009	W119.8
6113A	B	1121	1249		X			X	X	X	X		6111	083357	E046.7	092741	W146.7
6114A	B	1309	1433		X			X	X	X	X		6112	102129	E019.9	111513	W173.6
6115A	B	1455	1617		X			X	X	X	X		6113	120900	W007.0	130244	E159.6
6116A	B	1627	1749		X			X	X	X	X		6114	135632	W033.9	145016	E132.7
6118A	B	2013	2134		X			X	X	X	X		6115	154404	W060.8	163748	E105.8
6119A	B	2200	2320		X			X	X	X	X		6116	173136	W087.7	182520	E078.9
													6117	191907	W114.5	201251	E052.0
													6118	210639	W141.5	220023	E025.1
													6119	225411	W168.3	234755	W001.8

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
11 SEPTEMBER 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON	HDRSS TIME OFF	LR I R	THR I R	TDR E	<CAM R	ESM R	EBR	PMR	TWR L	HIR S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
61190	B	2318	0023				X	X	X	X			6120	004143	E164.8	013527	W028.7
61200	B	0106	0207				X	X	X	X			6121	022915	E137.9	032258	W055.5
6122R	B	0347	0508		X		X	X	X	X			6122	041646	E111.0	051030	W082.4
6123R	B	0533	0654		X		X	X	X	X			6123	060418	E084.2	065802	W109.3
6124A	B	0713	0832		X		X	X	X	X			6124	075150	E057.3	084534	W136.2
6125A	B	0859	1021		X		X	X	X	X			6125	093922	E030.4	103306	W163.1
6126A	B	1045	1208		X		X	X	X	X			6126	112653	E003.5	122037	E170.1
6127A	B	1231	1352		X		X	X	X	X			6127	131425	W023.4	140809	E143.2
6128A	B	1415	1520		X		X	X	X	X			6128	150157	W050.3	155541	E116.3
6129A	B	1545	1718		X		X	X	X	X			6129	164929	W077.1	174313	E089.4
6130A	B	1743	1906				X	X	X	X			6130	183701	W104.1	193044	E062.6
6131A	B	1931	2053				X	X	X	X			6131	202432	W130.9	211816	E035.6
6132A	B	2117	2238				X	X	X	X			6132	221204	W157.8	230548	E008.8
													6133	235936	W175.3	005320	W018.1

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
12 SEPTEMBER 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON	HDRSS TIME OFF	LR I R	THR I R	TDR E	<CAM R	ESM R	EBR	PMR	TWR L	HIR S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
61330	B	2323	0027				X	X	X	X			6134	014707	E148.4	024050	W045.0
61340	B	0209	0314				X	X	X	X			6135	033438	E121.5	042822	W071.9
6135R	B	0323	0425		X		X	X	X	X			6136	052210	E094.7	061554	W098.8
6136R	B	0450	0614		X		X	X	X	X			6137	070942	E067.8	080326	W125.6
6137A	B	0633	0749		X		X	X	X	X			6138	085714	E040.9	095057	W152.5
6138A	B	0817	0939		X		X	X	X	X			6139	104445	E014.0	113829	W179.4
6139A	B	1003	1126		X		X	X	X	X			6140	123217	W012.9	132601	E153.7
6140A	B	1149	1312		X		X	X	X	X			6141	141949	W039.8	151333	E126.8
6141A	B	1334	1454		X		X	X	X	X			6142	160721	W066.6	170104	E099.9
6142A	B	1518	1639		X		X	X	X	X			6143	175452	W093.5	184836	E073.1
6143A	B	1702	1824		X		X	X	X	X			6144	194224	W120.4	203608	E046.2
6144A	B	1849	2011		X		X	X	X	X			6145	212956	W147.3	222340	E020.3
6145A	B	2035	2157		X		X	X	X	X			6146	231728	W174.2	001111	W007.6
61460	B	2237	2341				X	X	X	X							

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
13 SEPTEMBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	C A M	E S M R	E R B	P M R	T W R L	H I R S	ASCENDING NODE DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
6147C	B	0127	0232					X	X	X	X		6147	010500	E159.0	015843	W034.5
6149R	B	0409	0530		X			X	X	X	X		6148	025231	E132.1	034615	W061.3
6150R	B	0557	0715		X			X	X	X	X		6149	044003	E105.2	053347	W088.2
6151A	B	0737	0857		X			X	X	X	X		6150	062735	E078.3	072118	W115.1
6152A	B	0922	1044		X			X	X	X	X		6151	081507	E051.4	090850	W142.0
6153A	B	1109	1231		X			X	X	X	X		6152	100238	E024.5	105622	W168.9
6154A	B	1253	1415		X			X	X	X	X		6153	115010	W002.3	124354	E164.2
6155A	B	1438	1558		X			X	X	X	X		6154	133742	W029.2	143126	E137.4
6156A	B	1621	1743		X			X	X	X	X		6155	152514	W056.1	161857	E110.5
6157A	B	1806	1929		X			X	X	X	X		6156	171245	W083.0	180629	E083.6
6158A	B	1954	2115		X			X	X	X	X		6157	190017	W106.9	195401	E056.7
6159A	B	2141	2301		X			X	X	X	X		6158	204749	W136.8	214133	E029.8
													6159	223521	W163.6	232904	E002.9

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
14 SEPTEMBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	C A M	E S M R	E R B	P M R	T W R L	H I R S	ASCENDING NODE DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
61600	B	0045	0149					X	X	X	X		6160	002253	E169.5	011636	W024.0
61610	B	0205	0309					X	X	X	X		6161	021024	E142.6	030408	W050.9
6163R	B	0545	0636		X			X	X	X	X		6162	035756	E115.7	045140	W077.7
6164A	B	0654	0813		X			X	X	X	X		6163	054528	E088.8	063911	W104.6
6165A	B	0841	0958		X			X	X	X	X		6164	073300	E062.0	082643	W131.5
6166A	B	1026	1150		X			X	X	X	X		6165	092032	E035.1	101415	W158.4
6167A	B	1213	1334		X			X	X	X	X		6166	110803	E008.2	120147	E174.8
6168A	B	1357	1517		X			X	X	X	X		6167	125535	W018.7	134918	E147.9
6169A	B	1541	1701		X			X	X	X	X		6168	144307	W045.6	153650	E121.0
6170A	B	1725	1848		X			X	X	X	X		6169	163038	W072.5	172422	E094.1
6171A	B	1913	2034		X			X	X	X	X		6170	181810	W099.4	191154	E067.2
6172A	B	2058	2219		X			X	X	X	X		6171	200542	W126.2	205926	E040.4
													6172	215314	W153.1	224657	E013.5
													6173	234046	180.0	003429	W013.4

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
15 SEPTEMBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	P M R	T W R L	H I R S	ASCENDING NODE DATA ORBIT	TIME HRMNSS	LONG DEGREE	DESCENDING NODE TIME HRMNSS	LONG DEGREE
61730	B	0004	0106					X	X	X	X		6174	012817	E153.1	022201	W040.3
61740	B	0121	0225					X	X	X	X		6175	031549	E126.2	040933	W067.2
6175R	B	0303	0354		X						X		6176	050321	E099.4	055704	W094.1
6176R	B	0431	0536		X						X		6177	065053	E072.5	074436	W121.0
6177A	B	0613	0730		X			X	X	X	X		6178	083824	E045.6	093208	W147.9
6178A	B	0758	0920		X			X	X	X	X		6179	102556	E018.7	111940	W174.7
6179A	B	0945	1108		X			X	X	X	X		6180	121328	W008.2	130711	E158.4
6180A	B	1131	1254		X			X	X	X	X		6181	140100	W035.0	145443	E131.5
6181A	B	1315	1438		X			X	X	X	X		6182	154632	W062.0	164215	E104.7
6182A	B	1459	1620		X			X	X	X	X		6183	173603	W088.8	182947	E077.8
6183A	B	1643	1806		X			X	X	X	X		6184	192335	W115.7	201718	E051.9
6184A	B	1829	1952		X			X	X	X	X		6185	211107	W142.6	220450	E024.0
6185A	B	2017	2139		X			X	X	X	X		6186	225839	W169.5	235222	W002.9
6186A	B	2205	2310		X						X						

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
16 SEPTEMBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	P M R	T W R L	H I R S	ASCENDING NODE DATA ORBIT	TIME HRMNSS	LONG DEGREE	DESCENDING NODE TIME HRMNSS	LONG DEGREE
61860	B	2351	0025					X	X	X	X		6187	004610	E163.7	013954	W029.8
61870	B	0038	0142					X	X	X	X		6188	023342	E136.8	032725	W056.7
6189R	B	0351	0513		X			X	X	X	X		6189	042114	E109.9	051457	W083.6
6190R	B	0537	0658		X			X	X	X	X		6190	060846	E083.0	070229	W110.4
6191A	B	0718	0838		X			X	X	X	X		6191	075617	E056.1	085001	W137.3
6192A	B	0903	1021		X			X	X	X	X		6192	094349	E029.2	103732	W164.2
6193A	B	1050	1205		X			X	X	X	X		6193	113121	E002.4	122504	E168.9
6194A	B	1235	1357		X			X	X	X	X		6194	131853	W024.6	141236	E142.1
6195A	B	1419	1540		X			X	X	X	X		6195	150625	W051.4	160008	E115.2
6196A	B	1602	1725		X			X	X	X	X		6196	165356	W078.3	174740	E088.3
6197A	B	1749	1910		X			X	X	X	X		6197	184128	W105.2	193511	E061.4
6198A	B	1935	2055		X			X	X	X	X		6198	202900	W132.1	212243	E034.5
6199A	B	2122	2242		X			X	X	X	X		6199	221632	W159.0	231015	E007.6

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
17 SEPTEMBER 1976

INT ORBIT AND STDN	HDR S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LR I R	THI R	TDR E	SCA M	SEM R	ERB	PMR	TWR L	HIR S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
6202R	B	0310	0430		X			X	X	X	X		6200	000403	E174.2	005747	W019.3
6203R	B	0455	0617		X			X	X	X	X		6201	015135	E147.3	024518	W046.1
6204A	B	0637	0754		X			X	X	X	X		6202	033907	E120.4	043250	W073.0
6205A	B	0822	0943		X			X	X	X	X		6203	052639	E093.5	062022	W099.9
6206A	B	1009	1130		X			X	X	X	X		6204	071410	E066.7	080754	W126.8
6207A	B	1154	1316		X			X	X	X	X		6205	090142	E039.8	095525	W153.7
6208A	B	1338	1500		X			X	X	X	X		6206	104914	E012.9	114257	E179.4
6209A	B	1522	1637		X			X	X	X	X		6207	123646	W014.0	133029	E152.6
6210A	B	1706	1829		X			X	X	X	X		6208	142418	W040.9	151801	E125.7
6211A	B	1853	2015		X			X	X	X	X		6209	161149	W067.8	170532	E098.8
6212A	B	2041	2201		X			X	X	X	X		6210	175921	W094.7	185304	E071.9
6213A	B	2229	2340		X			X	X	X	X		6211	194653	W121.6	204036	E045.0
													6212	213425	W148.5	222808	E018.1
													6213	232156	W175.3	001539	W008.7

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
18 SEPTEMBER 1976

INT ORBIT AND STDN	HDR S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LR I R	THI R	TDR E	SCA M	SEM R	ERB	PMR	TWR L	HIR S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
6213C	B	2343	0047					X	X	X	X		6214	010928	E157.8	020311	W035.6
6214C	B	0102	0205					X	X	X	X		6215	025700	E131.0	035043	W062.5
6216R	B	0413	0536		X			X	X	X	X		6216	044432	E104.1	053815	W089.4
6217A	B	0601	0720		X			X	X	X	X		6217	063203	E077.2	072547	W116.3
6218A	B	0741	0853		X			X	X	X	X		6218	081935	E050.3	091318	W143.1
6219A	B	0926	1039		X			X	X	X	X		6219	100707	E023.4	110050	W170.0
6220A	B	1113	1226		X			X	X	X	X		6220	115439	W003.5	124822	E163.1
6221A	B	1258	1412		X			X	X	X	X		6221	134211	W030.4	143554	E136.2
6222A	B	1441	1546		X			X	X	X	X		6222	152942	W057.3	162325	E109.3
6223A	B	1625	1743		X			X	X	X	X		6223	171714	W084.1	181057	E082.4
6224A	B	1811	1933		X			X	X	X	X		6224	190446	W111.0	195829	E055.6
6225A	B	1958	2119		X			X	X	X	X		6225	205218	W137.9	214601	E028.7
6226A	B	2145	2309		X			X	X	X	X		6226	223949	W164.8	233332	E001.8

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
19 SEPTEMBER 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON	HDRSS TIME OFF	LR I R	THR I R	TDR E	SCAM R	SEMR B	EPMR R	TWRL	THIS	ASCENDING NODE DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
62270	B	2349	0053				X	X	X	X		6227	002723	E168.3	012105	W025.1
62280	B	0206	0309				X	X	X	X		6228	021454	E145.5	030837	W052.0
6229R	B	0349	0454		X		X	X	X	X		6229	040226	E114.6	045609	W078.9
6231A	B	0659	0818		X		X	X	X	X		6230	054958	E087.7	064341	W105.7
6232A	B	0845	1006		X		X	X	X	X		6231	073730	E060.8	083113	W132.6
6233A	B	1031	1154		X		X	X	X	X		6232	092501	E033.9	101845	W159.5
6234A	B	1217	1339		X		X	X	X	X		6233	111233	E007.1	120616	E173.6
6235A	B	1401	1522		X		X	X	X	X		6234	130005	W019.8	135348	E146.7
6236A	B	1545	1705		X		X	X	X	X		6235	144737	W046.7	154120	E119.8
6237A	B	1729	1851		X		X	X	X	X		6236	163509	W073.6	172851	E093.0
6238A	B	1917	2038		X		X	X	X	X		6237	182240	W100.5	191623	E067.1
6239A	B	2103	2220		X		X	X	X	X		6238	201012	W127.4	210355	E039.2
6240A	B	2254	0010		X		X	X	X	X		6239	215744	W154.3	225127	E012.3
												6240	234516	E178.9	003858	W014.6

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
20 SEPTEMBER 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON	HDRSS TIME OFF	LR I R	THR I R	TDR E	SCAM R	SEMR B	EPMR R	TWRL	THIS	ASCENDING NODE DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
62400	B	0007	0110				X	X	X	X		6241	013247	E152.0	022630	W041.5
62410	B	0125	0228				X	X	X	X		6242	032019	E125.1	041402	W068.3
6242R	B	0307	0411		X		X	X	X	X		6243	050751	E098.2	060134	W095.2
6243R	B	0437	0600		X		X	X	X	X		6244	065523	E071.3	074906	W122.1
6244A	B	0618	0734		X		X	X	X	X		6245	084255	E044.5	093637	W149.0
6245A	B	0803	0925		X		X	X	X	X		6246	103026	E017.6	112409	W175.9
6246A	B	0949	1112		X		X	X	X	X		6247	121758	W009.3	131141	E157.3
6247A	B	1135	1258		X		X	X	X	X		6248	140530	W036.2	145913	E130.4
6248A	B	1321	1441		X		X	X	X	X		6249	155302	W063.1	164644	E103.5
6249A	B	1505	1625		X		X	X	X	X		6250	174034	W090.0	183416	E076.6
6250A	B	1649	1810		X		X	X	X	X		6251	192805	W116.9	202148	E049.7
6251A	B	1833	1956		X		X	X	X	X		6252	211537	W143.7	220920	E022.8
6252A	B	2021	2143		X		X	X	X	X		6253	230309	W170.6	235651	W004.0
6253A	B	2209	2328		X		X	X	X	X						

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
21 SEPTEMBER 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LR	THR	TDRA	SCM	ESR	EBR	PMR	TWL	HIS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
6253C	B	2325	0028				X	X	X	X			6254	005041	E162.5	014423	W030.9
62540	B	0043	0146				X	X	X	X			6255	023812	E135.6	033155	W057.8
6256R	B	0355	0517		X		X	X	X	X			6256	042544	E108.7	051927	W084.7
6257R	B	0541	0702		X		X	X	X	X			6257	061316	E081.9	070659	W111.6
6258A	B	0722	0842		X		X	X	X	X			6258	080048	E055.0	085430	W138.5
6259A	B	0907	1030		X		X	X	X	X			6259	094819	E028.1	104202	W165.3
6260A	B	1053	1217		X		X	X	X	X			6260	113551	E001.2	122934	E167.8
6261A	B	1239	1352		X		X	X	X	X			6261	132323	W025.7	141706	E140.9
6262A	B	1425	1544		X		X	X	X	X			6262	151055	W052.6	160437	E114.0
6263A	B	1607	1729		X		X	X	X	X			6263	165827	W079.5	175209	E087.1
6264A	B	1753	1915		X		X	X	X	X			6264	184558	W106.3	193941	E060.3
6265A	B	1945	2101		X		X	X	X	X			6265	203330	W133.2	212713	E033.4
6266A	B	2126	2247		X		X	X	X	X			6266	222102	W160.1	231444	E006.5

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
22 SEPTEMBER 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LR	THR	TDRA	SCM	ESR	EBR	PMR	TWL	HIS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
62670	B	2330	0035				X	X	X	X			6267	000834	E173.0	010216	W020.4
62680	B	0148	0251				X	X	X	X			6268	015605	E146.1	024948	W047.3
6269R	B	0329	0435		X		X	X	X	X			6269	034337	E119.3	043720	W074.2
6270R	B	0501	0622		X		X	X	X	X			6270	053109	E092.4	062451	W101.0
6271A	B	0641	0759		X		X	X	X	X			6271	071841	E065.5	081223	W127.9
6272A	B	0826	0947		X		X	X	X	X			6272	090613	E038.6	095955	W154.8
6273A	B	1013	1135		X		X	X	X	X			6273	105344	E011.7	114727	E178.3
6274A	B	1158	1321		X		X	X	X	X			6274	124116	W015.2	133459	E151.4
6275A	B	1343	1504		X		X	X	X	X			6275	142848	W042.0	152230	E124.5
6276A	B	1526	1648		X		X	X	X	X			6276	161620	W068.9	171002	E097.7
6277A	B	1711	1834		X		X	X	X	X			6277	180351	W095.8	185734	E070.8
6278A	B	1857	2019		X		X	X	X	X			6278	195123	W122.7	204506	E043.9
6279A	B	2045	2206		X		X	X	X	X			6279	213855	W149.6	223237	E017.0
6280A	B	2234	2352		X		X	X	X	X			6280	232627	W176.5	002009	W009.9

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
23 SEPTEMBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	LONG DEGREE	DESCENDING NODE TIME HRMNSS	LONG DEGREE
62800	B	2351	0050					X	X	X	X		6281	011359	E156.7	020741	W036.8
62810	B	0107	0210					X	X	X	X		6282	030130	E129.8	035513	W063.7
6283R	B	0418	0540		X			X	X	X	X		6283	044902	E102.9	054244	W090.5
6284R	B	0605	0724		X			X	X	X	X		6284	063634	E076.0	073016	W117.4
6285A	B	0745	0906		X			X	X	X	X		6285	082406	E049.1	091748	W144.3
6286A	B	0931	1054		X			X	X	X	X		6286	101137	E022.3	110520	W171.2
6287A	B	1117	1240		X			X	X	X	X		6287	115909	W004.6	125252	E162.0
6288A	B	1301	1423		X			X	X	X	X		6288	134641	W031.5	144023	E135.1
6289A	B	1446	1607		X			X	X	X	X		6289	153413	W058.4	162755	E108.2
6290A	B	1629	1753		X			X	X	X	X		6290	172145	W085.3	181527	E081.3
6291A	B	1815	1938		X			X	X	X	X		6291	190916	W112.2	200259	E054.4
6292A	B	2003	2125		X			X	X	X	X		6292	205648	W139.0	215030	E027.5
6293A	B	2150	2310		X			X	X	X	X		6293	224420	W165.9	233802	E000.7

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
24 SEPTEMBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	LONG DEGREE	DESCENDING NODE TIME HRMNSS	LONG DEGREE
6296R	B	0337	0458		X			X	X	X	X		6294	003152	E167.2	012534	W026.3
6297R	B	0523	0644		X			X	X	X	X		6295	021923	E140.3	031306	W053.1
6298A	B	0703	0822		X			X	X	X	X		6296	040655	E113.4	050037	W080.0
6299A	B	0849	1010		X			X	X	X	X		6297	055427	E086.5	064809	W106.9
6300A	B	1035	1159		X			X	X	X	X		6298	074159	E059.7	083541	W133.8
6301A	B	1221	1343		X			X	X	X	X		6299	092931	E032.8	102313	W160.7
6302A	B	1355	1527		X			X	X	X	X		6300	111702	E005.9	121045	E172.5
6303A	B	1549	1709		X			X	X	X	X		6301	130434	W021.0	135816	E145.6
6304A	B	1734	1856		X			X	X	X	X		6302	145206	W047.9	154548	E118.7
6305A	B	1921	2043		X			X	X	X	X		6303	163938	W074.8	173320	E091.8
6306A	B	2107	2229		X			X	X	X	X		6304	182709	W101.6	192052	E064.9
6307A	B	2259	0015		X			X	X	X	X		6305	201441	W128.5	210823	E038.0
													6306	220213	W155.4	225555	E011.2
													6307	234945	E177.7	004327	W015.7

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
25 SEPTEMBER 1976

INT ORBIT AND STDN	HDR S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LR I R	TH I R	TT D E	SC A M	SE M R	ER B	PM P	TW R L	HI R S	ASCENDING NODE DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
63070	B	0013	0116					X	X	X	X		6308	013717	E150.8	023059	W042.6
63080	B	0129	0233					X	X	X	X		6309	032448	E124.0	041830	W069.5
6309R	B	0313	0416		X			X	X	X	X		6310	051220	E097.1	060602	W096.4
6311A	B	0622	0739		X			X	X	X	X		6311	065952	E070.2	075334	W123.3
6312A	B	0810	0929		X			X	X	X	X		6312	084724	E043.3	094106	W150.1
6313A	B	0953	1117		X			X	X	X	X		6313	103455	E016.4	112838	W177.0
6314A	B	1141	1302		X			X	X	X	X		6314	122227	W010.5	131609	E156.1
6315A	B	1325	1446		X			X	X	X	X		6315	140959	W037.3	150341	E129.2
6316A	B	1509	1629		X			X	X	X	X		6316	155731	W064.2	165113	E102.3
6317A	B	1653	1814		X			X	X	X	X		6317	174502	W091.1	183845	E075.5
6318A	B	1838	2001		X			X	X	X	X		6318	193234	W118.0	202616	E048.6
6319A	B	2026	2147		X			X	X	X	X		6319	212006	W144.9	221348	E021.7
6320A	B	2214	2332		X			X	X	X	X		6320	230738	W171.8	000120	W005.2

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
26 SEPTEMBER 1976

INT ORBIT AND STDN	HDR S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LR I R	TH I R	TT D E	SC A M	SE M R	ER B	PM P	TW R L	HI R S	ASCENDING NODE DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
63200	B	2329	0033					X	X	X	X		6321	005506	E161.4	014848	W032.0
6321C	B	0046	0151					X	X	X	X		6322	024238	E134.5	033620	W058.9
6323R	B	0359	0520		X			X	X	X	X		6323	043010	E107.6	052352	W085.8
6325A	B	0726	0846		X			X	X	X	X		6324	061742	E080.7	071124	W112.7
6326A	B	0913	1034		X			X	X	X	X		6325	080513	E053.8	085855	W139.6
6327A	B	1058	1222		X			X	X	X	X		6326	095245	E026.9	104627	W166.5
6328A	B	1245	1406		X			X	X	X	X		6327	114017	E007.1	123359	E166.7
6329A	B	1429	1549		X			X	X	X	X		6328	132749	W026.8	142131	E139.8
6330A	B	1611	1733		X			X	X	X	X		6329	151520	W053.7	160902	E112.9
6331A	B	1757	1919		X			X	X	X	X		6330	170252	W080.6	175634	E086.0
6332A	B	1945	2106		X			X	X	X	X		6331	185024	W107.5	194406	E059.1
6333A	B	2131	2251		X			X	X	X	X		6332	203756	W134.3	213138	E032.2
													6333	222527	W161.2	231909	E005.4

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
27 SEPTEMBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
63340	B	2334	0039					X	X	X	X		6334	001259	E171.9	010641	W021.5
63350	B	0151	0256					X	X	X	X		6335	020031	E145.0	025413	W048.4
6336R	B	0336	0439		X			X	X	X	X		6336	034803	E118.1	044145	W075.3
6337R	B	0505	0626		X			X	X	X	X		6337	053534	E091.2	062916	W102.2
6338A	B	0645	0803		X			X	X	X	X		6338	072306	E064.4	081648	W129.1
6339A	B	0830	0952		X			X	X	X	X		6339	091038	E037.5	100420	W156.0
6340A	B	1017	1130		X			X	X	X	X		6340	105810	E010.6	115152	E177.2
6341A	B	1202	1325		X			X	X	X	X		6341	124541	W016.3	133923	E150.3
6342A	B	1347	1508		X			X	X	X	X		6342	143313	W043.2	152655	E123.4
6343A	B	1530	1652		X			X	X	X	X		6343	162045	W070.1	171427	E096.5
6344A	B	1715	1837		X			X	X	X	X		6344	180817	W097.0	190157	E069.6
6345A	B	1902	2024		X			X	X	X	X		6345	195549	W123.8	204930	E042.7
6346A	B	2050	2209		X			X	X	X	X		6346	214320	W150.7	223702	E015.9
6347A	B	2239	2356		X			X	X	X	X		6347	233052	W177.6	002434	W011.0

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
28 SEPTEMBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
6347C	B	2353	0057					X	X	X	X		6348	011824	E155.5	021206	W037.9
6348C	B	0110	0214					X	X	X	X		6349	030556	E128.7	035937	W064.8
6349R	B	0255	0354		X			X	X	X	X		6350	045327	E101.8	054709	W091.7
6350R	B	0422	0544		X			X	X	X	X		6351	064059	E074.9	073441	W118.5
6351A	B	0605	0719		X			X	X	X	X		6352	082831	E048.0	092213	W145.4
6352A	B	0749	0910		X			X	X	X	X		6353	101602	E021.1	110944	W172.3
6353A	B	0935	1058		X			X	X	X	X		6354	120334	W005.8	125716	E160.8
6354A	B	1121	1244		X			X	X	X	X		6355	135106	W032.7	144448	E133.8
6355A	B	1306	1428		X			X	X	X	X		6356	153838	W059.6	163220	E107.0
6356A	B	1450	1611		X			X	X	X	X		6357	172610	W086.4	181951	E080.2
6357A	B	1654	1749		X			X	X	X	X		6358	191341	W113.3	200723	E053.3
6358A	B	1819	1940		X			X	X	X	X		6359	210113	W140.2	215455	E026.4
6359A	B	2007	2129		X			X	X	X	X		6360	224845	W167.0	234227	W000.5
6360A	B	2154	2313		X			X	X	X	X						

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
29 SEPTEMBER 1976

INT ORBIT AND STDN	HDR	HDRSS TIME ON	HDRSS TIME OFF	LR IR	TT IF	TDRS CAM	ESA PRB	EMU RMP	TWL	TDRS PSS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
63600	B	2310	00144			X	X	X	X		6361	003617	E166.1	012958	W027.4
6363R	B	0341	0457		X	X	X	X	X		6363	041120	E112.3	050502	W081.1
6364R	B	0527	0631		X	X	X	X	X		6364	055852	E085.4	065234	W108.0
6365A	B	0709	0828		X	X	X	X	X		6365	074624	E058.5	084005	W134.9
6366A	B	0853	1015		X	X	X	X	X		6366	093355	E031.7	102737	W161.8
6367A	B	1039	1203		X	X	X	X	X		6367	112127	E004.8	121509	E171.3
6368A	B	1225	1347		X	X	X	X	X		6368	130859	W022.1	140241	E144.5
6369A	B	1410	1531		X	X	X	X	X		6369	145631	W049.0	155012	E117.6
6370A	B	1555	1630		X	X	X	X	X		6370	164403	W075.9	173744	E090.7
6371A	B	1738	1901		X	X	X	X	X		6371	183134	W102.8	192516	E063.8
6372A	B	1925	2047		X	X	X	X	X		6372	201906	W129.7	211248	E036.9
6373A	B	2113	2332		X	X	X	X	X		6373	220638	W165.5	230019	E010.0
6374A	B	2305	0019		X	X	X	X	X		6374	235410	E176.6	004751	W016.8

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
30 SEPTEMBER 1976

INT ORBIT AND STDN	HDR	HDRSS TIME ON	HDRSS TIME OFF	LR IR	TT IR	TDRS CAM	ESA PRB	EMU RMP	TWL	TDRS PSS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
63740	B	0017	0121			X	X	X	X		6375	014141	E149.7	023523	W043.7
63750	B	0133	0237			X	X	X	X		6376	032913	E122.8	042255	W070.6
6376R	B	0317	0421		X	X	X	X	X		6377	051645	E096.0	061026	W097.5
6377R	B	0445	0608		X	X	X	X	X		6378	070417	E069.1	075758	W124.4
6378A	B	0626	0744		X	X	X	X	X		6379	085148	E042.2	094530	W151.2
6379A	B	0813	0933		X	X	X	X	X		6380	103920	E015.3	113302	W178.1
6380A	B	0958	1121		X	X	X	X	X		6381	122652	W011.6	132033	E155.0
6381A	B	1145	1307		X	X	X	X	X		6382	141424	W038.5	150805	E128.1
6382A	B	1329	1450		X	X	X	X	X		6383	160155	W065.4	165537	E101.2
6383A	B	1513	1634		X	X	X	X	X		6384	174927	W092.3	184309	E074.3
6384A	B	1657	1819		X	X	X	X	X		6385	193659	W119.1	203040	E047.5
6385A	B	1842	2006		X	X	X	X	X		6386	212431	W146.0	221812	E020.6
6386A	B	2030	2152		X	X	X	X	X		6387	231202	W172.9	000544	W006.3
6387A	B	2219	2337		X	X	X	X	X						

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
01 OCTOBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R F	S C A M	E S M R	E R B	E P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
6390R	B	0403	0526		X			X	X	X	X		6388	005934	E160.2	015316	W033.2
6391R	B	0550	0711		X			X	X	X	X		6389	024706	E133.4	034047	W060.1
6392A	B	0730	0851		X			X	X	X	X		6390	043438	E106.5	052819	W087.0
6393A	B	0917	1040		X			X	X	X	X		6391	062209	E079.6	071551	W113.9
6394A	B	1101	1226		X			X	X	X	X		6392	080941	E052.7	090323	W140.8
6395A	B	1249	1410		X			X	X	X	X		6393	095713	E025.8	105054	W167.6
6396A	B	1433	1553		X			X	X	X	X		6394	114445	W001.1	123826	E165.5
6397A	B	1615	1738		X			X	X	X	X		6395	133216	W028.0	142558	E138.6
6398A	B	1802	1924		X			X	X	X	X		6396	151948	W054.8	161330	E111.8
6399A	B	1949	2110		X			X	X	X	X		6397	170720	W081.7	180101	E084.9
6400A	B	2135	2256		X			X	X	X	X		6398	185452	W108.6	194833	E058.0
													6399	204224	W135.5	213605	E031.1
													6400	222955	W162.4	232337	E004.2

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
02 OCTOBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R F	S C A M	E S M R	E R B	E P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
6401C	B	2337	0042					X	X	X	X		6401	001727	E170.7	011108	W022.7
6402C	B	0157	0301					X	X	X	X		6402	020459	E143.9	025840	W049.6
6403R	B	0340	0445		X			X	X	X	X		6403	035231	E117.0	044612	W076.5
6404R	B	0509	0630		X			X	X	X	X		6404	054002	E090.1	063344	W103.3
6405A	B	0649	0809		X			X	X	X	X		6405	072734	E063.2	082115	W130.2
6406A	B	0835	0957		X			X	X	X	X		6406	091506	E036.3	100847	W157.1
6407A	B	1021	1144		X			X	X	X	X		6407	110238	E009.4	115619	E176.0
6408A	B	1207	1329		X			X	X	X	X		6408	125009	W017.4	134351	E149.1
6419A	B	1326	1430		X			X	X	X	X		6409	143741	W044.3	153122	E122.3
6410A	B	1535	1657		X			X	X	X	X		6410	162513	W071.2	171854	E095.4
6411A	B	1719	1842		X			X	X	X	X		6411	181241	W098.1	190626	E068.5
6412A	B	1906	2029		X			X	X	X	X		6412	200016	W125.0	205358	E041.6
6413A	B	2054	2214		X			X	X	X	X		6413	214748	W151.8	224129	E014.8
6414A	B	2247	2359		X			X	X	X	X		6414	233520	W178.7	002901	W012.2

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
03 OCTOBER 1976

INT ORBIT AND STDN	HDR STS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LR IR	THI R	TDR F	SCA M	ESM R	E B	PM R	TWR L	HIP S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
64140	B	2358	0102					X	X	X	X		6415	012255	E154.4	021636	W039.0
64150	B	0116	0219					X	X	X	X		6416	031027	E127.5	040408	W065.9
6416R	B	0259	0401		X			X	X	X	X		6417	045758	E100.6	055139	W092.8
6417R	B	0426	0550		X			X	X	X	X		6418	064530	E073.7	073911	W119.7
6418A	B	0609	0724		X			X	X	X	X		6419	083302	E046.8	092643	W146.6
6409A	B	0753	0914		X			X	X	X	X		6420	102034	E020.0	111415	W173.4
6420A	B	0939	1103		X			X	X	X	X		6421	120805	W006.9	130146	E159.7
6421A	B	1125	1249		X			X	X	X	X		6422	135537	W033.8	144918	E132.8
6422A	B	1310	1432		X			X	X	X	X		6423	154309	W060.7	163650	E105.9
6423A	B	1454	1615		X			X	X	X	X		6424	173041	W087.6	182422	E079.0
6424A	B	1638	1801		X			X	X	X	X		6425	191812	W114.5	201153	E052.1
6425A	B	1825	1946		X			X	X	X	X		6426	210544	W141.3	215925	E025.3
6426A	B	2013	2133		X			X	X	X	X		6427	225316	W168.2	234657	W001.6
6427A	B	2159	2319		X			X	X	X	X						

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
04 OCTOBER 1976

INT ORBIT AND STDN	HDR STS	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LR IR	THI R	TDR E	SCA M	ESM R	E B	PM P	TWR L	HIP S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
6427C	B	2314	0019					X	X	X	X		6428	004048	E164.9	013429	W028.5
64280	B	0033	0137					X	X	X	X		6429	022820	E138.0	032200	W055.4
6430R	B	0346	0508		X			X	X	X	X		6430	041551	E111.1	050932	W082.3
6431R	B	0531	0653		X			X	X	X	X		6431	060323	E084.2	065704	W109.2
6432A	B	0713	0832		X			X	X	X	X		6432	075055	E057.4	084436	W136.1
6433A	B	0858	1019		X			X	X	X	X		6433	093827	E030.5	103208	W162.9
6434A	B	1045	1206		X			X	X	X	X		6434	112558	E003.6	121939	E170.2
6435A	B	1230	1352		X			X	X	X	X		6435	131330	W023.3	140711	E143.3
6436A	B	1414	1535		X			X	X	X	X		6436	150102	W050.2	155443	E116.4
6437A	B	1557	1720		X			X	X	X	X		6437	164834	W077.0	174215	E089.6
6438A	B	1742	1905		X			X	X	X	X		6438	183605	W103.9	192946	E062.7
6439A	B	1930	2051		X			X	X	X	X		6439	202337	W130.8	211718	E035.8
6440A	B	2117	2237		X			X	X	X	X		6440	221109	W157.7	230450	E008.9
6441A	B	2310	0023		X			X	X	X	X		6441	235841	E175.5	005222	W018.0

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
05 OCTOBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	D M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
64410	B	0023	0124					X	X	X	X		6442	014613	E148.5	023953	W044.9
64420	B	0141	0245					X	X	X	X		6443	033344	E121.7	042725	W071.8
6443R	B	0321	0425		X			X	X	X	X		6444	052116	E094.8	061457	W098.7
6444R	B	0449	0609		X			X	X	X	X		6445	070848	E067.9	080229	W125.5
6445A	B	0631	0748		X			X	X	X	X		6446	085620	E041.0	095000	W152.4
6446A	B	0817	0938		X			X	X	X	X		6447	104351	E014.1	113732	W179.3
6447A	B	1002	1125		X			X	X	X	X		6448	123123	W012.8	132504	E153.8
6448A	B	1149	1311		X			X	X	X	X		6449	141855	W039.6	151236	E127.0
6449A	B	1333	1454		X			X	X	X	X		6450	160627	W066.5	170007	E100.1
6450A	B	1517	1639		X			X	X	X	X		6451	175353	W093.4	184739	E073.2
6451A	B	1702	1824		X			X	X	X	X		6452	194130	W120.3	203511	E046.3
6452A	B	1847	2010		X			X	X	X	X		6453	212902	W147.2	222243	E019.4
6453A	B	2035	2156		X			X	X	X	X		6454	231634	W174.1	001014	W007.5
6454A	B	2223	2342		X			X	X	X	X						

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
06 OCTOBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	D M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
6454C	B	2338	0041					X	X	X	X		6455	010406	E159.1	015746	W034.4
64550	B	0058	0201					X	X	X	X		6456	025137	E132.2	034518	W061.2
6457R	B	0407	0513		X								6457	043909	E105.3	053250	W088.1
6458R	B	0555	0715		X			X	X	X	X		6458	062641	E078.4	072022	W115.0
6459A	B	0735	0855		X			X	X	X	X		6459	081413	E051.5	090753	W141.9
6460A	B	0922	1043		X			X	X	X	X		6460	100144	E024.7	105525	W168.8
6461A	B	1107	1230		X			X	X	X	X		6461	114916	W002.2	124257	E164.3
6462A	B	1253	1413		X			X	X	X	X		6462	133648	W029.1	143029	E137.5
6463A	B	1437	1557		X			X	X	X	X		6463	152420	W056.0	161800	E110.6
6464A	B	1621	1743		X			X	X	X	X		6464	171151	W082.9	180532	E083.7
6465A	B	1805	1929		X			X	X	X	X		6465	185923	W109.8	195304	E056.8
6466A	B	1953	2115		X			X	X	X	X		6466	204655	W136.6	214036	E030.0
6467A	B	2141	2300		X			X	X	X	X		6467	223427	W163.5	232807	E003.1

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
07 OCTOBER 1976

INT ORBIT AND STDN	HDR	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LR IR	TH IR	TDRE	SCAM	SER	EBR	PMR	TWR	HIR SS	DATA ORBIT	ASCENDING NODE TIME HPMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
64680	B	0043	0147					X	X	X	X		6468	002159	E169.6	011539	W023.8
64690	B	0231	0335					X	X	X	X		6469	020930	E142.7	030311	W050.7
6470R	B	0350	0449		X			X	X	X	X		6470	035702	E115.8	045043	W077.6
6471R	B	0513	0635		X			X	X	X	X		6471	054434	E088.9	063814	W104.5
6472A	B	0718	0813		X			X	X	X	X		6472	073206	E062.1	082546	W131.4
6473A	B	0839	1001		X			X	X	X	X		6473	091937	E035.2	101318	W158.2
6474A	B	1025	1148		X			X	X	X	X		6474	110709	E008.3	120050	E174.9
6475A	B	1211	1334		X			X	X	X	X		6475	125441	W018.6	134821	E148.0
6476A	B	1357	1516		X			X	X	X	X		6476	144213	W045.5	153553	E121.1
6477A	B	1539	1701		X			X	X	X	X		6477	162944	W072.4	172325	E094.2
6478A	B	1725	1847		X			X	X	X	X		6478	181716	W099.3	191057	E067.3
6479A	B	1911	2033		X			X	X	X	X		6479	200448	W126.1	205828	E040.5
6480A	B	2057	2219		X			X	X	X	X		6480	215220	W153.0	224600	E013.6
6481A	B	2248	0005		X			X	X	X	X		6481	233952	W179.9	003332	W013.3

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
08 OCTOBER 1976

INT ORBIT AND STDN	HDR	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LR IR	TH IR	TDRE	SCAM	SER	EBR	PMR	TWR	HIR SS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
6483R	B	0249	0406		X			X	X	X	X		6482	012723	E153.2	022104	W040.2
6484R	B	0430	0553		X			X	X	X	X		6483	031455	E126.4	040836	W067.1
6485A	B	0613	0729		X			X	X	X	X		6484	050227	E099.5	055607	W093.9
6486A	B	0758	0919		X			X	X	X	X		6485	064959	E072.6	074339	W120.8
6487A	B	0945	1107		X			X	X	X	X		6486	083730	E045.7	093111	W147.7
6488A	B	1130	1253		X			X	X	X	X		6487	102502	E018.8	111843	W174.6
6489A	B	1315	1436		X			X	X	X	X		6488	121234	W003.1	130614	E158.5
6490A	B	1459	1620		X			X	X	X	X		6489	140006	W035.0	145346	E131.6
6491A	B	1643	1806		X			X	X	X	X		6490	154738	W061.8	164118	E104.8
6492A	B	1829	1951		X			X	X	X	X		6491	173509	W088.7	182850	E077.9
6493A	B	2017	2138		X			X	X	X	X		6492	192241	W115.6	201621	E051.0
6494A	B	2205	2323		X			X	X	X	X		6493	211013	W142.5	220353	E024.1
													6494	225745	W169.4	235125	E002.8

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
09 OCTOBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	C A M	E S M R	E R B	D M P	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
6494C	B	2319	0022					X	X	X	X		6495	004516	E165.8	013857	W029.7
64950	B	0038	0141					X	X	X	X		6496	023248	E136.9	032628	W056.5
6497R	B	0354	0511		X			X	X	X	X		6497	042020	E110.0	051400	W083.4
6498R	B	0537	0657		X			X	X	X	X		6498	060752	E083.1	070132	W110.3
6499A	B	0717	0837		X			X	X	X	X		6499	075523	E056.2	084904	W137.2
6500A	B	0902	1024		X			X	X	X	X		6500	094255	E029.4	103635	W164.1
6501A	B	1049	1211		X			X	X	X	X		6501	113027	E002.4	122407	E169.1
6502A	B	1234	1356		X			X	X	X	X		6502	131759	W024.4	141139	E142.2
6504A	B	1418	1539		X			X	X	X	X		6503	150531	W051.3	155911	E115.3
6505A	B	1747	1910		X			X	X	X	X		6504	165302	W078.2	174643	E088.4
6506A	B	1934	2056		X			X	X	X	X		6505	184034	W105.1	193414	E061.5
6507A	B	2121	2242		X			X	X	X	X		6506	202806	W132.0	212146	E034.6
													6507	221539	W158.9	230918	E007.8

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
10 OCTOBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	C A M	E S M R	E R B	D M P	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
65080	B	2323	0027					X	X	X	X		6508	000306	E174.3	005647	W019.1
65090	B	0143	0248					X	X	X	X		6509	015038	E147.4	024418	W046.0
6510R	B	0325	0430		X			X	X	X	X		6510	033810	E120.5	043150	W072.9
6511R	B	0454	0617		X			X	X	X	X		6511	052542	E093.6	061922	W099.8
6512A	B	0635	0753		X			X	X	X	X		6512	071313	E066.8	080654	W126.7
6513A	B	0822	0942		X			X	X	X	X		6513	090045	E039.9	095425	W153.5
6514A	B	0939	1044		X			X	X	X	X		6514	104817	E013.0	114157	E179.6
6515A	B	1127	1130		X			X	X	X	X		6515	123549	W013.9	132929	E152.7
6516A	B	1337	1458		X			X	X	X	X		6516	142320	W040.8	151700	E125.8
6517A	B	1522	1642		X			X	X	X	X		6517	161052	W067.6	170432	E098.9
6518A	B	1705	1828		X			X	X	X	X		6518	175824	W094.5	185204	E072.0
6519A	B	1851	2014		X			X	X	X	X		6519	194556	W121.4	203936	E045.2
6520A	B	2042	2200		X			X	X	X	X		6520	213327	W148.3	222707	E018.3
6521A	B	2230	2336		X								6521	232059	W175.2	001439	W008.6

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
11 OCTOBER 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON	HDRSS TIME OFF	LR IR	TH IR	TDRS EAST	SCAMR	SEMR BR	EPHEM R	TWR L	HIRR S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
65210	B	2348	0041				X	X	X	X		6522	010831	E157.9	020211	W035.5
65220	B	0102	0206				X	X	X	X		6523	025603	E131.1	034943	W062.4
6524R	B	0413	0535		X		X	X	X	X		6524	044334	E104.2	053714	W089.2
6525R	B	0559	0719		X		X	X	X	X		6525	063106	E077.3	072446	W116.1
6526A	B	0739	0900		X		X	X	X	X		6526	081838	E050.4	091218	W143.0
6527A	B	0926	1048		X		X	X	X	X		6527	100610	E023.5	105950	W169.9
6528A	B	1111	1234		X		X	X	X	X		6528	115341	W003.4	124721	E163.2
6529A	B	1257	1418		X		X	X	X	X		6529	134113	W030.2	143453	E136.3
6530A	B	1442	1601		X		X	X	X	X		6530	152845	W057.1	162225	E109.5
6531A	B	1624	1747		X		X	X	X	X		6531	171617	W084.0	180957	E082.6
6532A	B	1810	1932		X		X	X	X	X		6532	190348	W110.9	195728	E055.7
6533A	B	2001	2119		X		X	X	X	X		6533	205120	W137.8	214500	E028.8
6534A	B	2144	2304		X		X	X	X	X		6534	223852	W164.6	233232	E001.9

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
12 OCTOBER 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME ON	HDRSS TIME OFF	LR IR	TH IR	TDRS EAST	SCAMR	SEMR BR	EPHEM R	TWR L	HIRR S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
65350	B	2345	0050				X	X	X	X		6535	002624	E168.5	012004	W024.9
6536C	B	0209	0312				X	X	X	X		6536	021356	E141.6	030735	W051.8
6537R	B	0348	0453		X		X	X	X	X		6537	040127	E114.7	045507	W078.7
6538R	B	0518	0639		X		X	X	X	X		6538	054859	E087.8	064239	W105.6
6539A	B	0658	0817		X		X	X	X	X		6539	073631	E060.9	083011	W132.5
6540A	B	0843	1006		X		X	X	X	X		6540	092402	E034.1	101742	W159.4
6541A	B	1030	1153		X		X	X	X	X		6541	111134	E007.2	120514	E173.8
6542A	B	1216	1338		X		X	X	X	X		6542	125906	W019.7	135246	E146.9
6543A	B	1400	1520		X		X	X	X	X		6543	144638	W046.6	154018	E120.0
6544A	B	1543	1705		X		X	X	X	X		6544	163409	W073.5	172749	E093.1
6545A	B	1728	1851		X		X	X	X	X		6545	182141	W100.4	191521	E066.2
6546A	B	1915	2037		X		X	X	X	X		6546	200913	W127.3	210253	E039.3
6547A	B	2102	2223		X		X	X	X	X		6547	215645	W154.1	225025	E012.5
6548A	B	2254	0008		X		X	X	X	X		6548	234416	E179.0	003756	W014.5

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
13 OCTOBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
65480	B	0007	0108					X	X	X	X		6549	013148	E152.1	022528	W041.3
65490	B	0124	0228					X	X	X	X		6550	031920	E125.2	041300	W068.2
6550R	B	0310	0408		X			X	X	X	X		6551	050652	E098.3	060032	W095.1
6551R	B	0435	0559		X			X	X	X	X		6552	065424	E071.4	074803	W121.9
6552A	B	0617	0733		X			X	X	X	X		6553	084155	E044.6	093535	W148.8
6553A	B	0802	0923		X			X	X	X	X		6554	102927	E017.7	112307	W175.7
6554A	B	0948	1111		X			X	X	X	X		6555	121659	W009.2	131039	W157.4
6555A	B	1126	1257		X			X	X	X	X		6556	140431	W036.1	145810	E130.5
6556A	B	1312	1440		X			X	X	X	X		6557	155202	W063.0	164542	E103.6
6557A	B	1500	1624		X			X	X	X	X		6558	173934	W089.9	183314	E076.8
6558A	B	1647	1810		X			X	X	X	X		6559	192706	W116.7	202046	E049.9
6559A	B	1832	1952		X			X	X	X	X		6560	211438	W143.6	220817	E023.0
6560A	B	2020	2141		X			X	X	X	X		6561	230209	W170.5	235549	W003.9
6561A	B	2208	2327		X			X	X	X	X						

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
14 OCTOBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	S C A N	E S M R	E R B	P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
6561C	B	2324	0028					X	X	X	X		6562	004941	E162.7	014321	W030.8
6562C	B	0043	0147					X	X	X	X		6563	023713	E135.8	033053	W057.7
6564R	B	0354	0516		X			X	X	X	X		6564	042445	E108.9	051824	W084.6
6566A	B	0721	0841		X			X	X	X	X		6565	061216	E082.0	070556	W111.4
6567A	B	0906	1029		X			X	X	X	X		6566	075948	E055.1	085328	W138.3
6568A	B	1053	1216		X			X	X	X	X		6567	094720	E028.2	104100	W165.2
6569A	B	1238	1400		X			X	X	X	X		6568	113452	E001.3	122831	E167.9
6570A	B	1423	1544		X			X	X	X	X		6569	132223	W025.6	141603	E141.0
6571A	B	1606	1728		X			X	X	X	X		6570	150955	W052.4	160335	E114.1
6572A	B	1751	1856		X								6571	165727	W079.3	175106	E087.3
6573A	B	1939	2044		X								6572	184459	W106.2	193838	E060.4
6574A	B	2225	2236		X								6573	203230	W133.1	212610	E033.5
													6574	222002	W160.0	231342	E006.6

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
15 OCTOBER 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME		LTT	THDR	DCA	SEMR	EPBR	TWLR	HDRS	ASCENDING NODE		DESCENDING NODE	
		ON HRMN	OFF HRMN							DATA ORBIT	TIME HRMNSS	LONG DEGREE	TIME HRMNSS	LONG DEGREE
6577R	B	0314	0419	X						6575	000734	E173.1	010113	W020.3
6579A	B	0639	0758	X		X	X	X	X	6576	015506	E146.3	024845	W047.2
6580A	B	0825	0947	X		X	X	X	X	6577	034237	E119.4	043617	W074.0
6581A	B	1011	1134	X		X	X	X	X	6578	053009	E092.5	062349	W100.9
6582A	B	1157	1315	X		X	X	X	X	6579	071741	E065.6	081120	W127.8
6583A	B	1342	1503	X		X	X	X	X	6580	090513	E038.7	095852	W154.7
6584A	B	1526	1646	X		X	X	X	X	6581	105244	E011.9	114624	E178.4
6585A	B	1710	1827	X		X	X	X	X	6582	124016	W015.0	133356	E151.6
6586A	B	1856	2018	X		X	X	X	X	6583	142748	W041.9	152127	E124.7
6587A	B	2043	2204	X		X	X	X	X	6584	161520	W068.8	170859	E097.8
6588A	B	2234	2349	X		X	X	X	X	6585	180251	W095.7	185631	E070.9
										6586	195023	W122.6	204403	E044.0
										6587	213755	W149.4	223134	E017.1
										6588	232527	W176.3	001906	W009.7

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
16 OCTOBER 1976

INT ORBIT AND STDN	HDRS	HDRSS TIME		LTT	THDR	DCA	SEMR	EPBR	TWLR	HDRS	ASCENDING NODE		DESCENDING NODE	
		ON HRMN	OFF HRMN							DATA ORBIT	TIME HRMNSS	LONG DEGREE	TIME HRMNSS	LONG DEGREE
6588C	R	2347	0050			X	X	X	X	6589	011258	E156.8	020638	W036.6
6589C	B	0107	0211			X	X	X	X	6590	030030	E129.9	035410	W063.5
6591R	B	0416	0539	X		X	X	X	X	6591	044802	E103.0	054141	W090.4
6593A	B	0743	0904	X		X	X	X	X	6592	063534	E076.2	072913	W117.3
6594A	B	0930	1035	X		X	X	X	X	6593	082305	E049.3	091645	W114.1
6595A	B	1115	1231	X		X	X	X	X	6594	101037	E022.4	110417	W171.0
6596A	B	1302	1419	X		X	X	X	X	6595	115809	W004.5	125148	E162.1
6597A	B	1446	1600	X		X	X	X	X	6596	134541	W031.4	143920	E135.2
6598A	B	1628	1751	X		X	X	X	X	6597	153312	W058.3	162652	E108.3
6599A	B	1814	1936	X		X	X	X	X	6598	172044	W085.1	181424	E081.4
6600A	B	2002	2123	X		X	X	X	X	6599	190816	W112.0	200155	E054.6
6601A	B	2149	2309	X		X	X	X	X	6600	205548	W138.9	214927	E027.7
										6601	224319	W165.8	233659	E000.8

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
17 OCTOBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	C A M	E S M R	E R B	P M R	T W R L	H I R S	ASCENDING NODE DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
66010	B	2307	0010					X	X	X	X		6602	003051	E167.3	012430	W026.1
66020	B	0023	0126					X	X	X	X		6603	021823	E140.4	031202	W053.0
6604R	B	0336	0457		X			X	X	X	X		6604	040555	E113.6	045934	W079.9
6605R	B	0522	0643		X			X	X	X	X		6605	055326	E086.7	064706	W106.7
6606A	B	0702	0822		X			X	X	X	X		6606	074058	E059.8	083437	W133.6
6607A	B	0848	1010		X			X	X	X	X		6607	092830	E032.9	102209	W160.5
6608A	B	1034	1157		X			X	X	X	X		6608	111602	E006.0	120941	E172.6
6609A	B	1220	1336		X			X	X	X	X		6609	130333	W020.8	135713	E145.7
6610A	B	1404	1525		X			X	X	X	X		6610	145105	W047.7	154444	E118.9
6611A	B	1548	1704		X			X	X	X	X		6611	163837	W074.6	173216	E092.0
6612A	B	1732	1855		X			X	X	X	X		6612	182609	W101.5	191948	E065.1
6613A	B	1920	2034		X			X	X	X	X		6613	201340	W128.4	210720	E038.2
6614A	B	2106	2224		X			X	X	X	X		6614	220112	W155.3	225451	E011.3
6615A	B	2258	0013		X			X	X	X	X		6615	234844	E177.9	004223	W015.6

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
18 OCTOBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	C A M	E S M R	E R B	P M R	T W R L	H I R S	ASCENDING NODE DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
66150	B	0011	0111					X	X	X	X		6616	013616	E151.0	022955	W042.5
66160	B	0127	0231					X	X	X	X		6617	032347	E124.1	041727	W069.4
6617R	B	0311	0413		X			X	X	X	X		6618	051119	E097.2	060458	W096.2
6618R	B	0439	0602		X			X	X	X	X		6619	065851	E070.3	075230	W123.1
6619A	B	0621	0737		X			X	X	X	X		6620	084623	E043.4	094002	W150.0
6620A	B	0806	0920		X			X	X	X	X		6621	103354	E016.6	112734	W176.8
6621A	B	0952	1110		X			X	X	X	X		6622	122126	W010.3	131505	E156.3
6622A	B	1138	1258		X			X	X	X	X		6623	140858	W037.2	150237	E129.4
6623A	B	1258	1439		X			X	X	X	X		6624	155630	W064.1	165009	E102.5
6624A	B	1507	1628		X			X	X	X	X		6625	174401	W091.0	183741	E075.6
6625A	B	1651	1814		X			X	X	X	X		6626	193133	W117.9	202512	E048.7
6626A	B	1837	1959		X			X	X	X	X		6627	211905	W144.8	221244	E021.9
6627A	B	2025	2145		X			X	X	X	X		6628	230637	W171.6	000016	W005.1
6628A	B	2213	2331		X			X	X	X	X						

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
19 OCTOBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	P M R	T W L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
66280	B	2327	0031					X	X	X	X		6629	005408	E161.5	014748	W031.9
66290	B	0047	0150					X	X	X	X		6630	024140	E134.6	033519	W058.8
6631R	B	0358	0520		X			X	X	X	X		6631	042912	E107.7	052251	W085.7
6633A	B	0726	0846		X			X	X	X	X		6632	061645	E080.9	071024	W112.6
6634A	B	0911	1034		X			X	X	X	X		6633	080417	E054.0	085756	W139.5
6635A	B	1058	1219		X			X	X	X	X		6634	095148	E027.1	104528	W166.4
6636A	B	1243	1404		X			X	X	X	X		6635	113920	E000.2	123259	E166.8
6637A	B	1427	1547		X			X	X	X	X		6636	132652	N026.7	142031	E139.9
6638A	B	1609	1715		X								6637	151424	W053.6	160803	E113.0
6639A	B	1755	1909		X			X	X	X	X		6638	170155	W080.5	175534	E086.1
6640A	B	1943	2104		X			X	X	X	X		6639	184927	W107.4	194306	E059.3
6641A	B	2130	2250		X			X	X	X	X		6640	203659	W134.2	213038	E032.4
													6641	222431	W161.1	231810	E005.5

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
20 OCTOBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	P M R	T W L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
66420	B	2330	0035					X	X	X	X		6642	001202	E172.0	010541	W021.4
66430	B	0150	0254					X	X	X	X		6643	015934	E145.1	025313	W048.3
6644R	B	0334	0438		X			X	X	X	X		6644	034706	E118.3	044045	W075.2
6646A	B	0644	0802		X			X	X	X	X		6645	053438	E091.4	062817	W102.1
6647A	B	0830	0942		X			X	X	X	X		6646	072209	E064.5	081548	W128.9
6648A	B	1015	1129		X			X	X	X	X		6647	090941	E037.6	100320	W155.8
6649A	B	1202	1317		X			X	X	X	X		6648	105713	E010.7	115052	E177.3
6650A	B	1346	1501		X			X	X	X	X		6649	124445	W016.2	133824	E150.4
6651A	B	1530	1624		X			X	X	X	X		6650	143216	W043.1	152555	E123.6
6652A	B	1714	1837		X			X	X	X	X		6651	161948	W069.9	171327	E096.7
6653A	B	1902	2023		X			X	X	X	X		6652	180720	W096.8	190059	E069.8
6654A	B	2048	2209		X			X	X	X	X		6653	195452	W123.7	204831	E042.9
6655C	B	2247	2351					X	X	X	X		6654	214223	W150.6	223602	E016.0
													6655	232955	W177.5	002334	W010.9

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
21 OCTOBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
66560	B	0112	0215					X	X	X	X		6656	011727	E155.7	021106	W037.8
6658R	B	0422	0544		X			X	X	X	X		6657	030459	E128.8	035838	W064.7
6660A	B	0748	0909		X			X	X	X	X		6658	045230	E101.9	054609	W091.5
6661A	B	0934	1057		X			X	X	X	X		6659	064002	E075.0	073341	W118.4
6662A	B	1120	1243		X			X	X	X	X		6660	082734	E048.1	092113	W145.3
6663A	B	1306	1426		X			X	X	X	X		6661	101506	E021.3	110845	W172.2
6664A	B	1450	1611		X			X	X	X	X		6662	120237	W005.6	125616	E160.9
6665A	B	1634	1756		X			X	X	X	X		6663	135009	W032.5	144348	E134.1
6666A	B	1818	1941		X			X	X	X	X		6664	153741	W059.4	163120	E107.2
6667A	B	2006	2128		X			X	X	X	X		6665	172513	W086.3	181852	E080.3
6668A	B	2154	2314		X			X	X	X	X		6666	191244	W113.2	200623	E053.4
													6667	210016	W140.1	215355	E026.5
													6668	224748	W166.9	234127	W000.4

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
22 OCTOBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
6671R	B	0340	0502		X			X	X	X	X		6669	003520	E166.2	012859	W027.2
6673A	B	0707	0827		X			X	X	X	X		6670	022251	E139.3	031630	W054.1
6674A	B	0852	1013		X			X	X	X	X		6671	041023	E112.4	050402	W081.0
6675A	B	1038	1202		X			X	X	X	X		6672	055755	E085.5	065134	W107.9
6676A	B	1224	1346		X			X	X	X	X		6673	074527	E058.6	083906	W134.8
6677A	B	1410	1529		X			X	X	X	X		6674	093258	E031.8	102737	W161.6
6678A	B	1552	1714		X			X	X	X	X		6675	112030	E004.9	121409	E171.5
6679A	B	1738	1900		X			X	X	X	X		6676	130802	W022.0	140141	E144.6
6680A	B	1924	2046		X			X	X	X	X		6677	145534	W048.9	154913	E117.7
6681A	B	2111	2232		X			X	X	X	X		6678	164305	W075.8	173644	E090.8
													6679	183037	W102.6	192416	E063.9
													6680	201809	W129.5	211148	E037.1
													6681	220541	W156.4	225919	E010.2
													6682	235312	E176.7	004651	W016.7

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
23 OCTOBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
6692C	B	2311	0016					X	X	X	X		6683	014044	E150.8	023423	W043.6
6683C	B	0132	0236					X	X	X	X		6684	032816	E122.9	042155	W070.5
6686A	B	0626	0743		X			X	X	X	X		6685	051548	E096.1	060926	W097.4
6687A	B	0811	0932		X			X	X	X	X		6686	070319	E069.2	075658	W124.2
6688A	B	0958	1120		X			X	X	X	X		6687	085051	E042.3	094430	W151.1
6689A	B	1143	1306		X			X	X	X	X		6688	103823	E015.4	113202	W178.0
6690A	B	1328	1449		X			X	X	X	X		6689	122555	W011.5	131933	E155.1
6691A	B	1511	1633		X			X	X	X	X		6690	141326	W038.4	150705	E128.2
6692A	B	1656	1818		X			X	X	X	X		6691	160058	W065.2	165437	E101.4
6693A	B	1842	2004		X			X	X	X	X		6692	174830	W092.1	184209	E074.5
6694A	B	2030	2151		X			X	X	X	X		6693	193602	W119.0	202940	E047.6
6695A	B	2218	2237		X			X	X	X	X		6694	212333	W145.9	221712	E020.7
													6695	231105	W172.8	000444	W006.2

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
24 OCTOBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
6695C	B	2332	0036					X	X	X	X		6696	005837	E160.4	015216	W033.1
6696C	B	0052	0156					X	X	X	X		6697	024609	E133.5	033947	W060.0
6698R	B	0402	0524		X			X	X	X	X		6698	043340	E106.6	052719	W086.9
6699R	B	0550	0707		X			X	X	X	X		6699	062112	E079.7	071451	W113.7
6700A	B	0730	0850		X			X	X	X	X		6700	080644	E052.8	090223	W140.6
6701A	B	0915	1038		X			X	X	X	X		6701	095616	E025.9	104954	W167.5
6702A	B	1102	1224		X			X	X	X	X		6702	114347	W001.0	123726	E165.7
6703A	B	1248	1409		X			X	X	X	X		6703	133119	W027.9	142458	E138.8
6704A	B	1406	1510		X			X	X	X	X		6704	151851	W054.7	161230	E111.9
6705A	B	1614	1737		X			X	X	X	X		6705	170623	W081.6	180001	E085.0
6706A	B	1800	1923		X			X	X	X	X		6706	185354	W108.5	194733	E058.1
6707A	B	1948	2109		X			X	X	X	X		6707	204126	W135.4	213505	E031.2
6708A	B	2134	2255		X			X	X	X	X		6708	222858	W162.3	232237	E004.4

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
25 OCTOBER 1976

INT ORBIT AND STDN	HDR S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LR IR	TH IR	TDRE	SCAM	SEMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
67090	B	2334	0039					X	X	X	X		6709	001632	E170.9	011011	W022.5
67100	B	0155	0259					X	X	X	X		6710	020404	E144.0	025743	W049.4
6711R	B	0338	0442		X			X	X	X	X		6711	035136	E117.1	044514	W076.3
6713A	B	0648	0807		X			X	X	X	X		6712	053908	E090.2	063246	W103.2
6714A	B	0834	0955		X			X	X	X	X		6713	072639	E063.3	082018	W130.1
6715A	B	1020	1143		X			X	X	X	X		6714	091411	E036.5	100750	W157.0
6716A	B	1206	1328		X			X	X	X	X		6715	110143	E009.6	115521	E176.2
6717A	B	1351	1511		X			X	X	X	X		6716	124914	W017.3	134253	E149.3
6718A	B	1534	1655		X			X	X	X	X		6717	143646	W044.2	153025	E122.4
6719A	B	1718	1841		X			X	X	X	X		6718	162418	W071.1	171757	E095.5
6720A	B	1906	2027		X			X	X	X	X		6719	181150	W098.0	190528	E068.6
6721A	B	2052	2213		X			X	X	X	X		6720	195921	W124.8	205300	E041.7
6722A	B	2242	2359		X			X	X	X	X		6721	214653	W151.7	224032	E014.9
													6722	233425	W178.6	002804	W012.0

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
26 OCTOBER 1976

INT ORBIT AND STDN	HDR S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LR IR	TH IR	TDRE	SCAM	SEMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
67220	B	2357	0100					X	X	X	X		6723	012157	E154.5	021535	W038.9
67230	B	0115	0219					X	X	X	X		6724	030928	E127.6	040307	W065.8
6724R	B	0259	0358		X			X	X	X	X		6725	045700	E100.7	055039	W092.7
6725R	B	0426	0546		X			X	X	X	X		6726	064432	E073.9	073811	W119.5
6726A	B	0607	0723		X			X	X	X	X		6727	083204	E047.0	092542	W146.4
6727A	B	0752	0913		X			X	X	X	X		6728	101935	E020.1	111314	W173.3
6728A	B	0938	1101		X			X	X	X	X		6729	120707	N006.8	130046	E159.8
6729A	B	1124	1247		X			X	X	X	X		6730	135439	W033.7	144818	E132.9
6733A	B	1830	1946					X	X	X	X		6731	154211	W060.5	163549	E106.0
6734A	B	2011	2132					X	X	X	X		6732	172942	W087.4	182321	E079.2
6735A	B	2158	2318					X	X	X	X		6733	191714	W114.3	201053	E052.3
													6734	210446	W141.2	215825	E025.4
													6735	225218	W168.1	234556	W001.5

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
27 OCTOBER 1976

INT ORBIT AND STDN	HDR S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LR IR	TH IR	TD FR	TC AM	SM RR	SE BR	PM RR	TW LR	HI RS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
67350	B	2315	0018					X	X	X	X		6736	003949	E165.0	013328	W028.4
67360	B	0031	0136					X	X	X	X		6737	022721	E138.2	032100	W055.2
6738R	B	0346	0506					X	X	X	X		6738	041453	E111.3	050832	W082.1
6740A	B	0711	0831					X	X	X	X		6739	060225	E084.4	065603	W109.0
6741A	B	0858	1019					X	X	X	X		6740	074956	E057.5	084335	W135.9
6742A	B	1043	1206					X	X	X	X		6741	093728	E030.6	103107	W162.8
6743A	B	1230	1351					X	X	X	X		6742	112500	E003.8	121839	E170.3
6744A	B	1414	1534					X	X	X	X		6743	131232	W023.2	140610	E143.5
6745A	B	1556	1718					X	X	X	X		6744	150003	W050.1	155342	E116.6
6746A	B	1742	1904					X	X	X	X		6745	164735	W076.9	174114	E089.7
6747A	B	1930	2050					X	X	X	X		6746	183507	W103.8	192846	E062.8
6748A	B	2115	2235					X	X	X	X		6747	202239	W130.7	211617	E035.9
6749A	B	2306	0022					X	X	X	X		6748	221010	W157.6	230349	E009.0
													6749	235742	E175.6	005121	W017.8

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
28 OCTOBER 1976

INT ORBIT AND STDN	HDR S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LR IR	TH IR	TD ER	TC AM	SM RR	SE BR	PM RR	TW LR	HI RS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
67490	B	0021	0124					X	X	X	X		6750	014514	E148.7	023853	W044.7
67500	B	0137	0241					X	X	X	X		6751	033246	E121.8	042624	W071.6
6751R	B	0320	0423					X	X	X	X		6752	052017	E094.9	061356	W098.5
6753A	B	0630	0748					X	X	X	X		6753	070749	E068.0	080128	W125.4
6754A	B	0815	0937					X	X	X	X		6754	085521	E041.2	094900	W152.3
6755A	B	1002	1124					X	X	X	X		6755	104253	E014.2	113631	W179.2
6756A	B	1147	1310					X	X	X	X		6756	123024	W012.6	132403	E154.0
6757A	B	1332	1454					X	X	X	X		6757	141756	W039.5	151135	E127.1
6758A	B	1516	1636					X	X	X	X		6758	160528	W066.4	165907	E100.2
6759A	B	1700	1822					X	X	X	X		6759	175300	W093.3	184638	E073.3
6760A	B	1846	2009					X	X	X	X		6760	194032	W120.2	203410	E046.5
6761A	B	2034	2155					X	X	X	X		6761	212803	W147.0	222142	E019.6
6762A	B	2222	2340					X	X	X	X		6762	231535	W173.9	000914	W007.3

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
29 OCTOBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
6765R	B	0407	0529					X	X	X	X		6763	010307	E159.2	015645	W034.2
6766A	B	0548	0704					X	X	X	X		6764	025039	E132.3	034417	W061.1
6767A	B	0734	0855					X	X	X	X		6765	043810	E105.5	053149	W088.0
6768A	B	0920	1043					X	X	X	X		6766	062542	E078.6	071921	W114.9
6769A	B	1106	1228					X	X	X	X		6767	081314	E051.7	090652	W141.7
6770A	B	1251	1413					X	X	X	X		6768	100046	E024.8	105424	W168.6
6771A	B	1435	1556					X	X	X	X		6769	114817	W002.1	124156	E164.5
6772A	B	1619	1741					X	X	X	X		6770	133549	W029.0	142928	E137.6
6773A	B	1804	1927					X	X	X	X		6771	152321	W055.9	161659	E110.7
6774A	B	1952	2113					X	X	X	X		6772	171053	W082.8	180431	E083.8
6775A	B	2139	2259					X	X	X	X		6773	185824	W109.6	195203	E057.0
													6774	204556	W136.5	213935	E030.1
													6775	223327	W163.4	232706	E003.2

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
30 OCTOBER 1976

INT ORBIT AND STDN	H D R S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	L R I R	T H I R	T D R E	S C A M	E S M R	E R B	P M R	T W R L	H I R S	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
6776C	B	2338	0043					X	X	X	X		6776	002100	E169.7	011438	W023.7
6777C	B	0201	0304					X	X	X	X		6777	020831	E142.8	030210	W050.6
6778R	B	0344	0438					X	X	X	X		6778	035603	E116.0	044942	W077.5
6780A	B	0654	0812					X	X	X	X		6779	054335	E089.1	063713	W104.3
6782C	B	1058	1219					X	X	X	X		6780	073107	E062.2	082445	W131.2
6783C	B	1243	1405					X	X	X	X		6781	091838	E035.3	101217	W158.1
6785A	B	1538	1700					X	X	X	X		6782	110610	E008.4	115949	E175.0
6786A	B	1723	1845					X	X	X	X		6783	125342	W018.5	134720	E148.1
6787A	B	1910	2032					X	X	X	X		6784	144114	W045.3	153452	E121.3
6788A	B	2058	2218					X	X	X	X		6785	162845	W072.2	172224	E094.4
6789A	B	2247	0003					X	X	X	X		6786	181617	W099.1	190956	E067.5
													6787	200349	W126.0	205727	E040.6
													6788	215122	W152.9	224459	E013.7
													6789	233852	W179.7	003231	W013.2

TABLE 2 - 2
DATA AVAILABILITY ON-OFF TIMES
31 OCTOBER 1976

INT - ORBIT AND STDN	HDR S	HDRSS TIME ON HRMN	HDRSS TIME OFF HRMN	LRI	THIR	TDRE	SCAM	SEMR	ERB	PMR	TWRL	HIRS	DATA ORBIT	ASCENDING NODE TIME HRMNSS	ASCENDING NODE LONG DEGREE	DESCENDING NODE TIME HRMNSS	DESCENDING NODE LONG DEGREE
67890	B	0002	0106					X	X	X	X		6790	012624	E153.4	022003	W040.0
67900	B	0123	0222					X	X	X	X		6791	031356	E126.5	040734	W066.9
6791R	B	0302	0405					X	X	X	X		6792	050128	E099.6	055506	W093.8
6792R	B	0430	0554					X	X	X	X		6793	064859	E072.7	074238	W120.7
6793A	B	0611	0728					X	X	X	X		6794	083631	E045.8	093010	W147.6
6794A	B	0758	0918					X	X	X	X		6795	102403	E019.0	111741	W174.5
6795A	B	0943	1105					X	X	X	X		6796	121135	W007.9	130513	E158.7
6796A	B	1130	1252					X	X	X	X		6797	135906	W034.8	145245	E131.8
6797A	B	1314	1435					X	X	X	X		6798	154638	W061.7	164017	E104.9
6798A	B	1458	1619					X	X	X	X		6799	173410	W088.6	182748	E078.0
6799A	B	1642	1804					X	X	X	X		6800	192142	W115.5	201520	E051.1
6800A	B	1827	1950					X	X	X	X		6801	210913	W142.3	220252	E024.3
6801A	B	2015	2136					X	X	X	X		6802	225645	W169.2	235024	W002.6
6802A	B	2203	2322					X	X	X	X						

SECTION 3

IMAGE DISPLAYS OF ESMR

This section briefly describes the ESMR experiment, the format of the image displays derived from the data of this experiment and presents image examples of selected data. A complete description of the ESMR experiment is found in Section 5 of The Nimbus 6 User's Guide.

The ESMR is a two-channel scanning radiometer receiving microwave radiation in a 250 MHz band centered at 37 GHz. One channel is used to measure the vertical polarization of the radiation, and the other measures the horizontal polarization. The antenna beam scans ahead of the spacecraft along a conical surface with a constant angle of 45 degrees with respect to the antenna axis. Spatial resolution of each element is about 20 km in the cross-track direction by 45 km in the direction parallel to the subpoint track.

For a brief description of the HIRS and SCAMS experiments formerly described in this Section, see The Nimbus 6 Data Catalog, Volume 5, Section 3. A complete description of the HIRS and SCAMS experiments may be found in The Nimbus 6 User's Guide, Section 3 and 4 respectively.

All useable HIRS and SCAMS data have been converted to 4" x 5" black and white images. ESMR data will continue to be converted to 4" x 5" black and white image as long as the experiment continues to function in an operational mode. Selected images from the ESMR experiment for September and October 1976 are presented in this section. Complete coverage times are listed in the Data Availability ON-OFF Times in Table 2-2.

Section 5 of The Nimbus 6 User's Guide describes in detail the image format of the ESMR. The following is a summary of the format, detailing changes to the User's Guide where needed. The processed display contains the following items:

- NIMBUS 6 (ESMR)

  This identifies the satellite and the experiment.

- (DATE)

  This identifies the Greenwich month, day, and year the data were recorded on board the satellite.

- SCALE F (P2)

  Since orbit 3933, ESMR has operated in the P (partial) mode. For each experiment the data from each interrogation orbit is displayed on a

single image. Through orbit 3932 (31 March 1976), each ESMR scan line is displayed once and twice after orbit 3932. Similarly, each of the 71 scan-spot elements is displayed once through orbit 3932 and twice after orbit 3933.

- INT ORBIT

The interrogation orbit number identifies the orbit in progress when the recorded data is transmitted to a STDN station. Usually parts of two data orbits are on the same display. The interrogation orbit number will only identify the last orbit of each display.

- TIME (and) SUBPOINT

Satellite time and latitude-longitude information are presented along the vertical line down the center of each display. The line represents the satellite subpoint track, which is located down the center of each of the swaths on each display. Time is GMT with ticks along the left side of the line at each five minute mark (on the five minutes). Time is annotated (hour and minute) every 15 minutes (on the quarter hour).

Subpoint information presents latitude and longitude positions of the satellite subpoint. Each tick mark on the right side of the vertical line is annotated with the subpoint latitude and longitude (to the nearest degree). Latitude is labeled N (north) or S (south). Longitude is labeled E (east) or W (west).

After orbit 3933 and again at orbit 6185, the ESMR data display was changed. The following condensed changes apply for TIME and SUBPOINT information: Satellite time information is presented along the vertical lines to the left and to the right of the data display. Time is GMT with 5 minute ticks marks. Time annotations consist of hour-minute displays with 15 minute intervals or quarter-hour notations.

Latitude and longitude coordinates are in grid form centrally placed between two sets of data; each data set are a compliment of the appropriate grid overlay immediately adjacent to it's border. For a complete description of new format see ESMR CHANNEL-RANGE DISPLAYS, this section of the catalog.

- GRAY SCALE

Each image has an 18-step gray scale along the bottom of the display. The gray scales are used to define parameter value intervals for each image swath of each display by assigning different parameter values to the gray scale for each swath. Tables 3-1 through 3-3 define the parameter values versus gray scale for each ESMR image swath.

Table 3-1

Brightness Temperature Value for each Step of the Gray Scale on ESMR Image Displays for Orbits 828 through 3932 (13 August 1975 through 31 March 1976) (Brightness Temperatures are in °K)

Gray Scale Number		Swath Number and ESMR Display Parameter									
		1 and 11 (T_H)	2 and 12 (T_V)	3 and 13 $\left(\frac{T_H+T_V}{2}\right)$	4 and 14 (T_H)	5 and 15 (T_V)	6 and 16 $\left(\frac{T_H+T_V}{2}\right)$	7 and 17 (T_H)	8 and 18 (T_V)	9 and 19 $\left(\frac{T_H+T_V}{2}\right)$	10 and 20 (T_V-0 6T_H)
(black)	1	> 200	> 230	> 210	> 250	> 270	> 250	> 290	> 300	> 280	>140
	2	196-200	226-230	206-210	246-250	267-270	247-250	287-290	298-300	278-280	136-140
	3	191-196	223-226	203-206	243-246	264-267	244-247	284-287	295-298	275-278	133-136
	4	187-191	219-223	199-203	239-243	261-264	241-244	281-284	293-295	273-275	129-133
	5	183-187	215-219	195-199	235-239	258-261	238-241	278-281	290-293	270-273	125-129
	6	178-183	211-215	191-195	231-235	254-258	234-238	274-278	288-290	268-270	121-125
	7	174-178	208-211	188-191	228-231	251-254	231-234	271-274	285-288	265-268	118-121
	8	169-174	204-208	184-188	224-228	248-251	228-231	268-271	283-285	263-265	114-118
	9	165-169	200-204	180-184	220-224	245-248	225-228	265-268	280-283	260-263	110-114
	10	161-165	196-200	176-180	216-220	242-245	222-225	262-265	278-280	258-260	106-110
	11	156-161	193-196	173-176	213-216	239-242	219-222	259-262	275-278	255-258	103-106
	12	152-156	189-193	169-173	209-213	236-239	216-219	256-259	273-275	253-255	99-103
	13	148-152	185-189	165-169	205-209	233-236	213-216	253-256	270-273	250-253	95-99
	14	143-148	181-185	161-165	201-205	229-233	209-213	249-253	268-270	248-250	91-95
	15	139-143	178-181	158-161	198-201	226-229	206-209	246-249	265-268	245-248	88-91
	16	134-139	174-178	154-158	194-198	223-226	203-206	243-246	263-265	243-245	84-88
	17	130-134	170-174	150-154	190-194	220-223	200-203	240-243	260-263	240-243	80-84
(white)	18	< 130	< 170	< 150	< 190	< 220	< 200	< 240	< 260	< 240	< 80

T_H = Brightness temperature derived from the ESMR horizontal polarization data

T_V = Brightness temperature derived from the ESMR vertical polarization data

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Table 3-2

Brightness Temperature Value for each Step of the Gray Scale on ESMR Image Displays for Orbits 3933 through 6184 (31 March through 15 September 1976)

(Brightness Temperatures are in °K)

Gray Scale Number		Swath Number and ESMR Display Parameter				
		1 and 6 (T_H)	2 and 7 (T_H)	3 and 8 (T_H)	4 and 9 (T_V)	5 and 10 $\left(\frac{T_H + T_V}{2}\right)$
(black)	1	> 200	> 230	> 210	> 250	> 270
	2	196-200	226 - 230	206-210	246-250	267-270
	3	191-196	223-226	203-206	243-246	264-267
	4	187-191	219-223	199-203	239-243	261-264
	5	183-187	215-219	195-199	235-239	258-261
	6	178-183	211-215	191-195	231-235	254-258
	7	174-178	208-211	188-191	228-231	252-254
	8	169-174	204-208	184-188	224-228	248-252
	9	165-169	200-204	180-184	220-224	245-248
	10	161-165	196-200	176-180	216-220	242-245
	11	156-161	193-196	173-176	213-216	239-242
	12	152-156	189-193	169-173	209-213	236-239
	13	148-152	185-189	165-169	205-209	233-236
	14	143-148	181-185	161-165	201-205	229-233
	15	139-143	178-181	158-161	198-201	226-229
	16	134-139	174-178	154-158	194-198	223-226
	17	130-134	170-174	150-154	190-194	220-223
(white)	18	< 130	<170	<150	<190	< 220

T_H = Brightness temperature derived from the ESMR horizontal polarization data

T_V = Brightness temperature derived from the ESMR vertical polarization data

Table 3-3

Brightness Temperature Value for each Step of the Gray Scale on ESMR Image Displays for Orbits 6185 (15 September 1976) through the present Catalog period

(Brightness Temperatures are in °K)

Swath Number and ESMR Display Parameter					
Gray Scale Number	1 and 6 (T_V)	2 and 7 (T_V)	3 and 8 (T_V)	4 and 9 (T_V)	5 and 10 (T_V)
(black) 1	>240	>254	>270	>280	>300
2	236-240	251-254	266-270	277-280	296-300
3	233-236	248-251	263-266	274-277	293-296
4	230-233	245-248	260-263	271-274	290-293
5	227-230	242-245	257-260	268-271	287-290
6	224-227	239-242	254-257	265-268	284-287
7	221-224	236-239	251-254	262-265	281-284
8	218-221	233-236	248-251	259-262	278-281
9	215-218	230-233	245-248	256-259	275-278
10	212-215	227-230	242-245	253-256	272-275
11	209-212	224-227	239-242	250-253	269-272
12	206-209	221-224	236-239	247-250	266-269
13	203-206	218-221	233-236	244-247	263-266
14	200-203	215-218	230-233	241-244	260-263
15	197-200	212-215	227-230	239-241	257-260
16	193-197	208-212	223-227	237-239	253-257
17	190-193	205-208	220-223	235-237	250-253
(white) 18	<190	<205	<220	<235	<250

T_V = Brightness temperature derived from the ESMR vertical polarization data

- 3200

  This identifies the computer used to process the data. All data was processed by the Control Data Corporation (CDC) 3200.

ESMR CHANNEL-RANGE DISPLAYS

Through orbit 3932 (31 March), the ESMR displays contained 20 swaths of data, as shown in the ESMR image displays in Section 3.3, The Nimbus 6 Data Catalog, Volume 1-5. The swaths are numbered (numbers not shown) from 1 on the left to 20 on the right. Each of the ten swaths on the left has the same geographic coverage. However, each swath displays either horizontally or vertically polarized data at a temperature range as listed in Table 3-1. The right set of ten swaths has a similar format, and displays the earliest recorded data. If the right swaths were cut and placed above the group on the left, the new display would show the continuous coverage recorded for that orbit. Swaths 1 and 11 have the same polarization and temperature range. Similarly, swaths 2 and 12, 3 and 13, etc., are the same. Table 3-1 is set up to show this duplication of parameter information.

The ESMR image display format has been modified on two occasions since launch date. The first modification occurred after orbit 3933 (31 March 1976) and the second change occurred after orbit 6184 (15 September 1976).

From orbit 3933 through orbit 6184 the ESMR image display had the following format:

The displays contain ten swaths of data plus a geographic grid overlay for each swath, as shown in the ESMR image display after orbit 3933 in Section 3.3, The Nimbus 6 Data Catalog, Volumes 5 through 7. The swaths are numbered (numbers not displayed) from 1 on the left to 10 on the right. Each of the five swaths on the left has the same geographic coverage. However, each swath displays either horizontally or vertically polarized data at a temperature range as listed in Table 3-2.

The right set of five swaths has a similar format, and displays the latest recorded data. If the right swaths were cut and placed below the group on the left, the new display would show the continuous coverage of that display.

Swaths 1 and 6 display the same parameter. That is, the temperature range and polarization for swaths 1 and 6 are the same. Similarly, swaths 2 and 7, 3 and 8, 4 and 9, and 5 and 10 display the same parameters. Table 3-2 is set up to show this duplication of parameter information.

Data time (GMT) references for the left set of five swaths are shown adjacent to the vertical line at the left. Time tick marks are every five minutes with hour and minute annotation every fifteen minutes. Data time references for the right set of five swaths are shown in a similar manner adjacent to the vertical line at the right.

The center portion of the display contains two swaths of grid overlay information: the left grid for overlay on each of the five swaths on the left, and the right grid for overlay on each of the five swaths on the right. The grid longitudes are generated at ten degree intervals between 55 degrees south and 55 degrees north, and at 20 degree intervals from 55 degrees to the Poles. Latitude grids are generated every five degrees. All grid lines consist of a series of dots at one degree intervals. Latitudes are labeled at 60°S, 30°S, EQ, 30°N, and 60°N. Longitude labels are normally placed next to each latitude label.

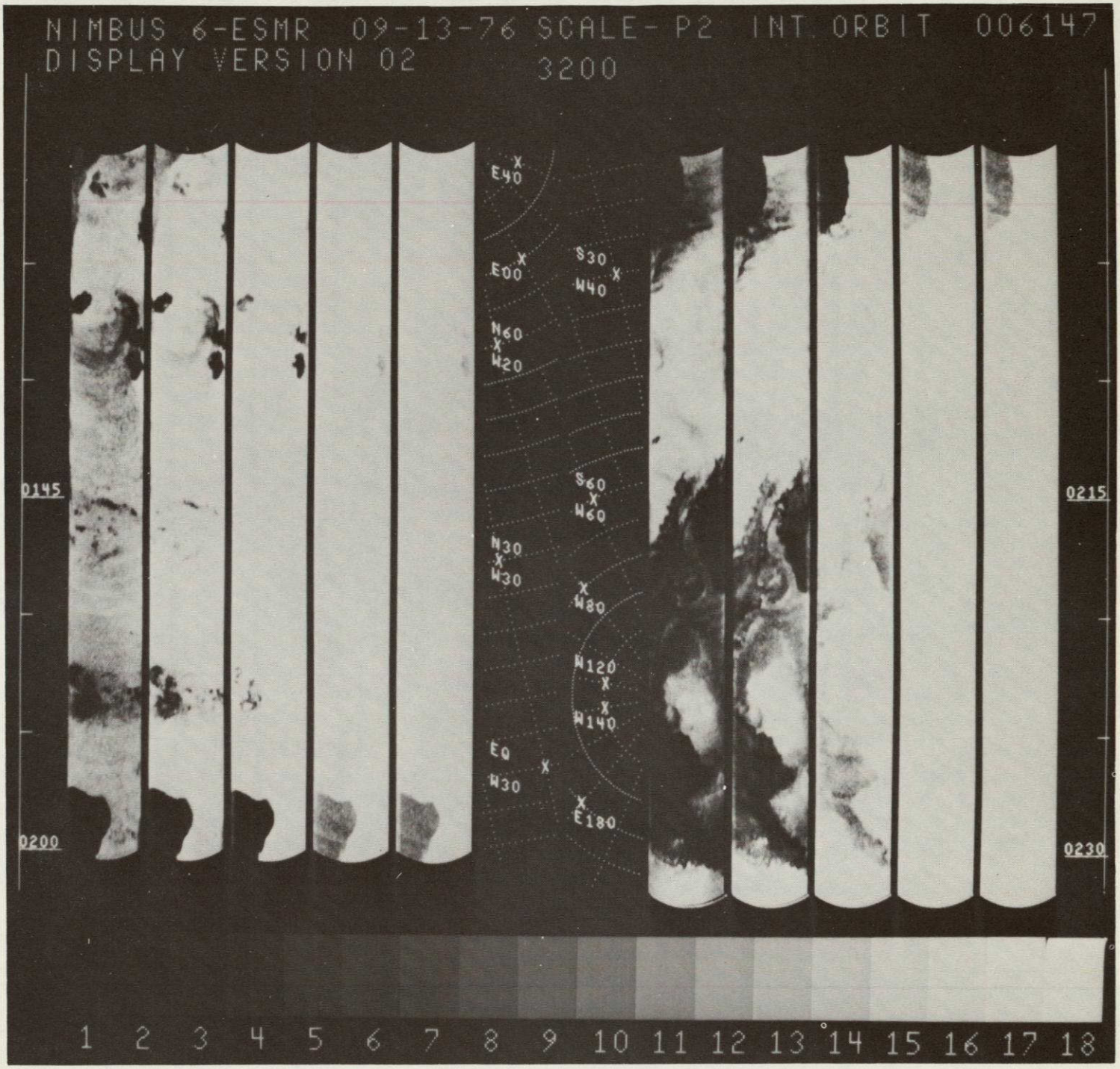
From orbit 6185 (15 September 1976) through the current data catalog period, the new ESMR image display has the following format:

Since an anomaly renders the Horizontal channel unuseable, the new ESMR format was devised to display the Vertical channel with five different temperature ranges and polarization for each individual swath. That is, the temperature range and polarization for swaths 1 and 6 are the same. Swaths 2 and 7, 3 and 8, 4 and 9, and 5 and 10 display the same parameters. Thus, four additional swaths of data are dedicated to the Vertical channel display for a total of 5 swaths as described above.

Data time (GMT) references and grid overlay information remain unchanged. Please refer to Table 3-3 for new parameter information.

SECTION 3.1

SELECTED ESMR IMAGE DISPLAYS



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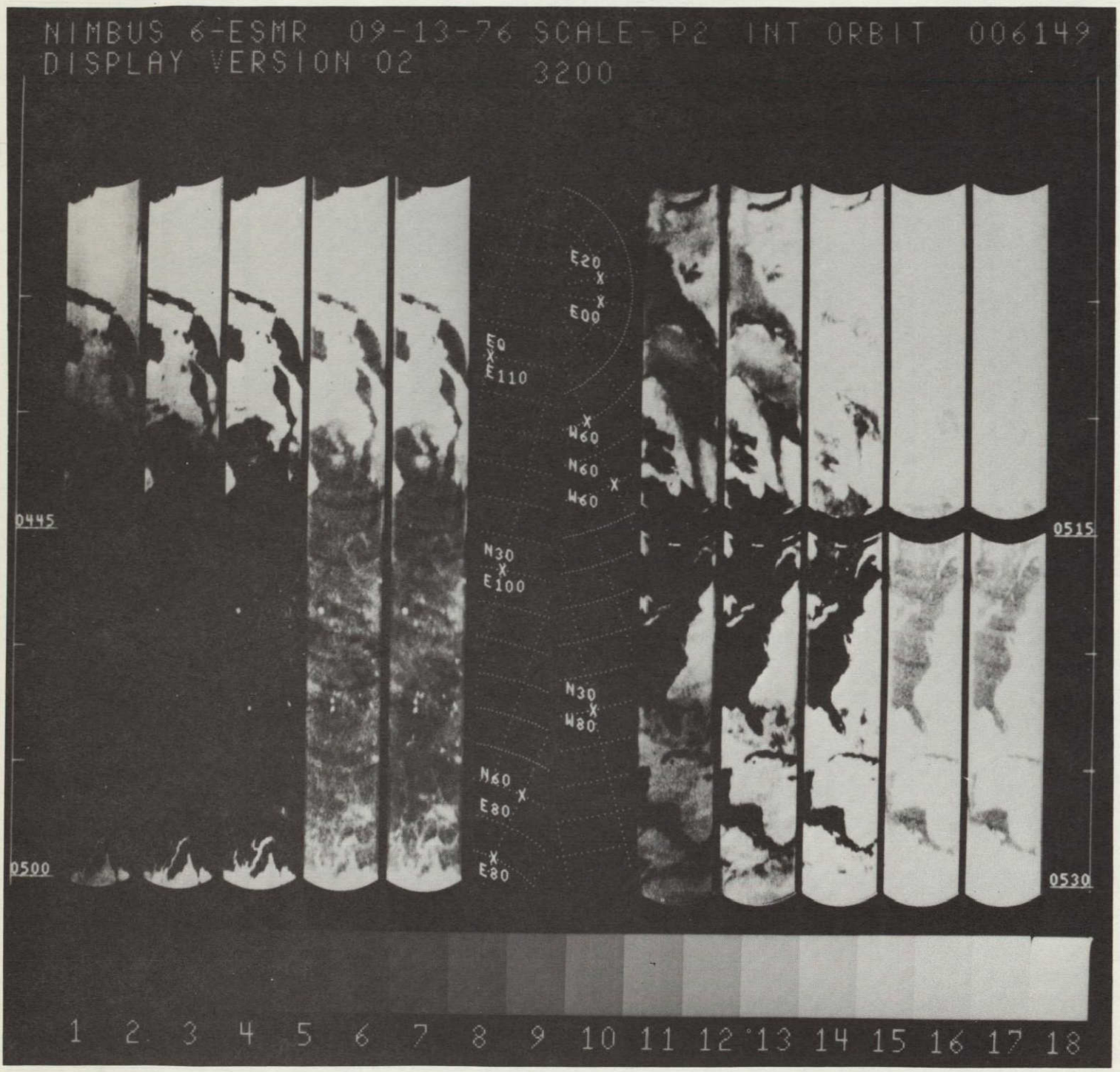
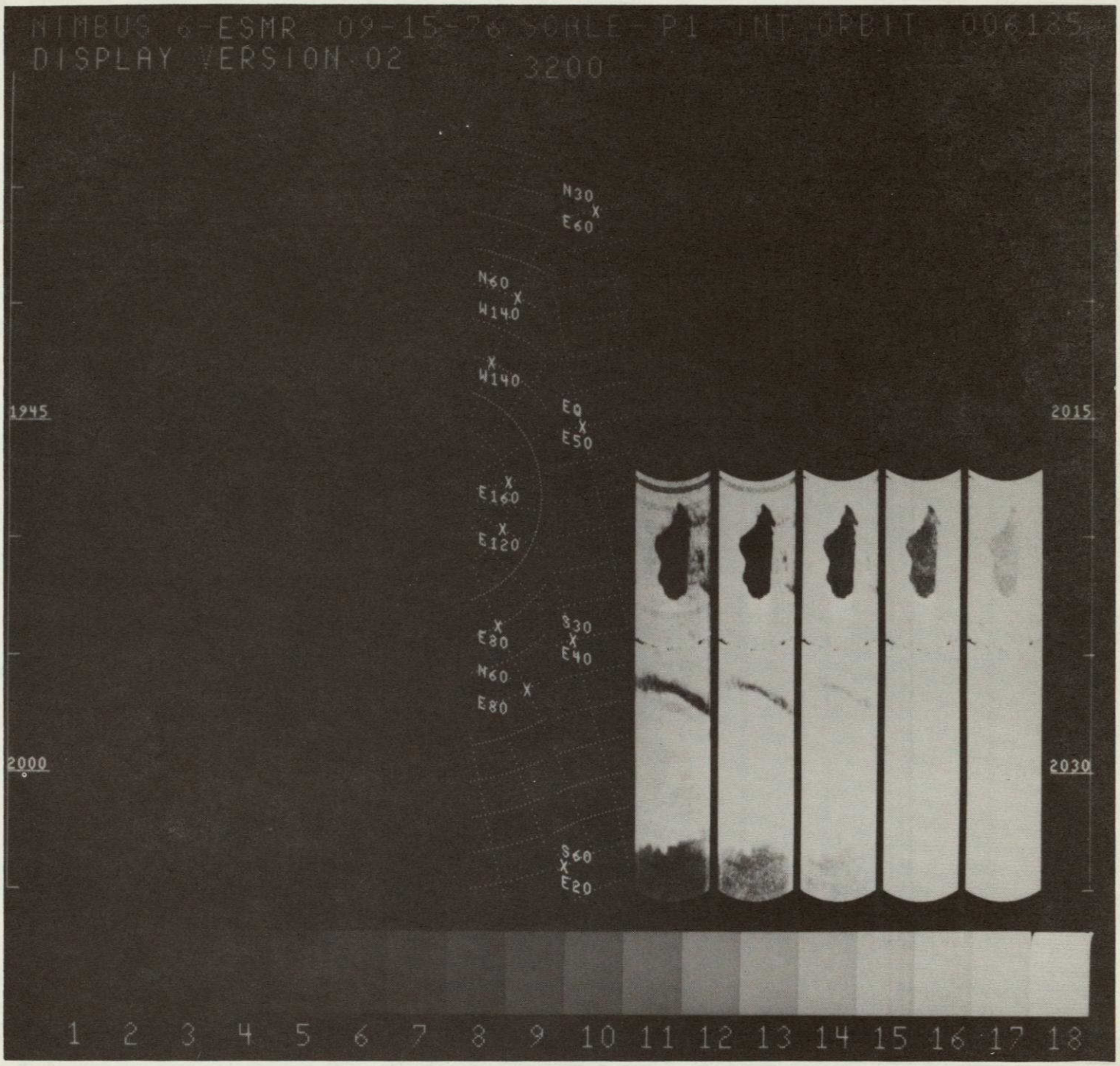

NIMBUS 6-ESMR 09-13-76 SCALE-P2 INT ORBIT 006149
DISPLAY VERSION 02
3200
E20
E00
E0
E110
W60
N60
W60
0445
N30
E100
N30
W80
N60
E80
E80
0500
0515
0530
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18



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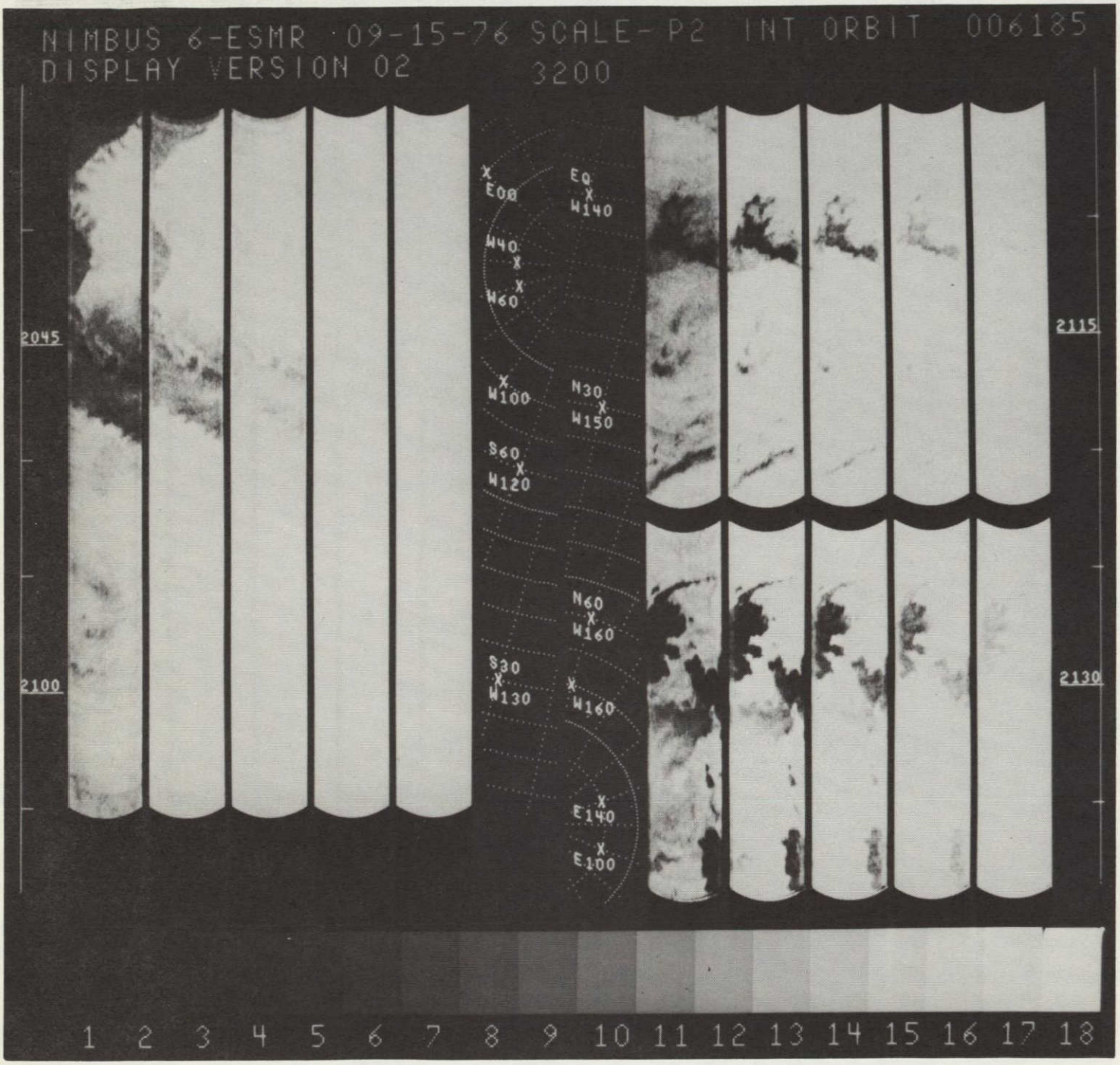
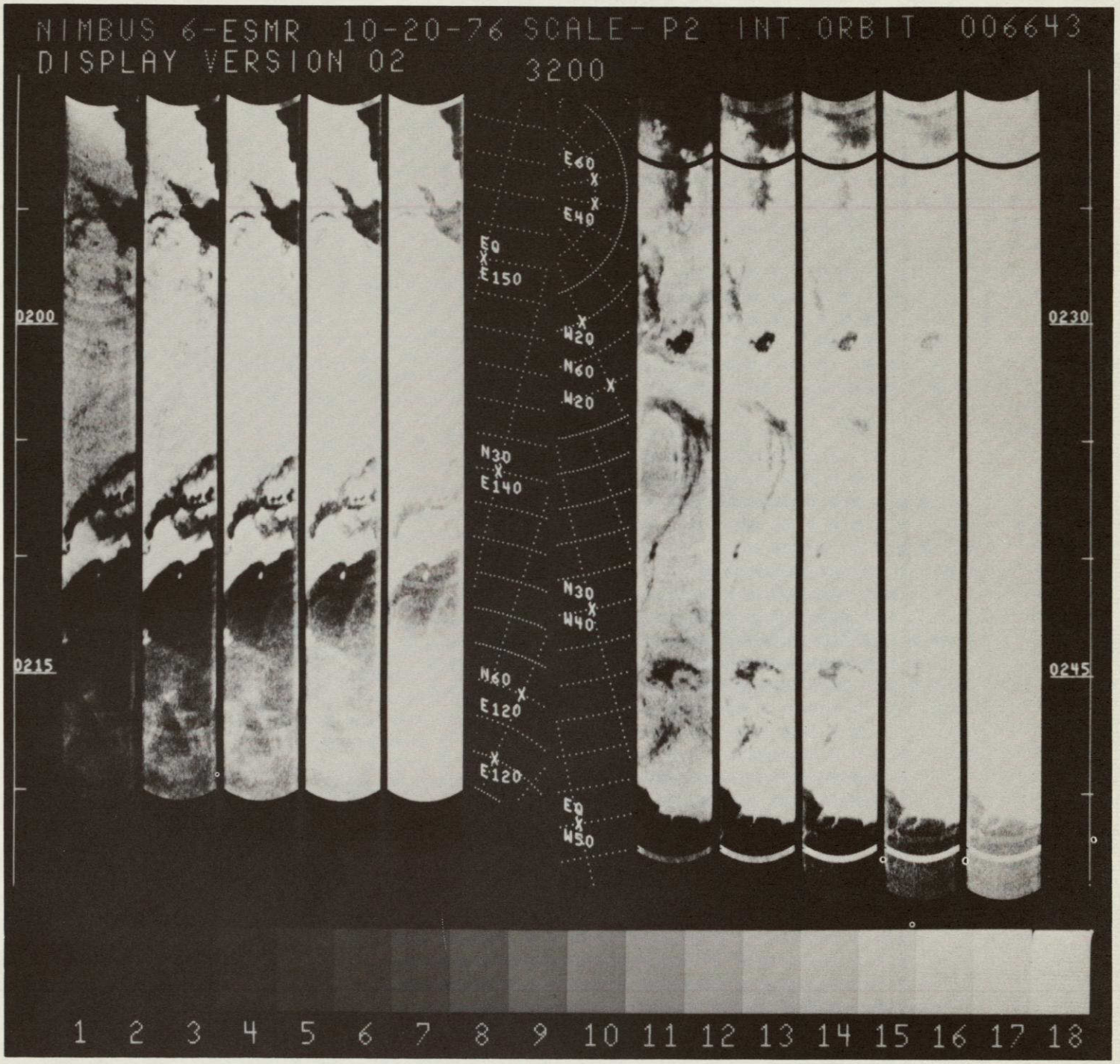

NIMBUS 6-ESMR 09-15-76 SCALE-P2 INT ORBIT 006185
DISPLAY VERSION 02
3200
EQ
W140
E08
W40
W60
2045
2115
W100
N30
W150
S60
W120
N60
W160
2100
2130
S30
W130
W160
E140
E100
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18



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When ordering THIR photographic data from NSSDC the following information should be given:

- Satellite (e.g. Nimbus 6)
- Date of data
- Data orbit number, channel (11.5 μm or 6.7 μm), and whether day or night data
- Data format, i.e., positive or negative transparencies, or prints
- Area of interest defined by latitude and longitude

In addition to the THIR film strips, photographic copies of the daily day or night montages prepared from film strips can be obtained.

Quantitative digital data are obtained when the original analog signals are digitized with full fidelity, and processed by an IBM 360 computer, where calibration and geographic referencing are applied. Each reduced radiation data tape prepared by the IBM 360 is called a Nimbus Meteorological Radiation Tape-THIR (NMRT-THIR). The NMRT can be used to generate grid print maps or to accomplish special scientific analyses. The format of this tape may be found in The Nimbus 6 User's Guide, Section 2.

Due to the large volume and the long computer running time required for processing THIR into NMRTs, Nimbus 6 THIR digital data are not routinely reduced to final NMRT format. Only those data which are specifically requested by the user will be processed. Requests should be made through NSSDC. The user is urged to make full use of the film strips which are abundantly available in nearly real time from the NSSDC.

A series of programs at GSFC produce printed and contoured data referenced to a grid on Polar Stereographic or Mercator map bases. These are called grid print maps. The advantages of the grid print map presentation are the display of absolute values of temperatures in their approximate location and geographical rectification of the data. Grid print maps may be produced for either a single orbit or a composite of several orbits. The following standard options are available and should be specified when requesting grid print maps from NSSDC.

- Map and Approximate Scale
  a. Polar Stereographic, 1:30 million
  b. Polar Stereographic, 1:10 million
  c. Multi-resolution Mercator maps are available down to 1:1 million scale.

- Maximum Scan Angle (50 degrees is practical limit)

- Field Values and Contouring. Unless otherwise specified, all maps will include field values and contouring except Mercator maps of scales larger than 1:20 million. A data population map, indicating the number of individual measurements contained in each grid point average, as well as a latitude-longitude description for geographically locating the data, will be provided along with each grid print map.

When ordering grid print map data, the following identifying information should be given:

- Satellite (e.g., Nimbus 6)

- Sensor (THIR)

- Channel (6.7 μm or 11.7 μm)

- Data Orbit Number

- Calendar Date of Equator Crossing

- Beginning and Ending Times of Data in GMT

- Latitude and Longitude Limits of Area of Interest

- Map Type and Map Scale

- Scan Angle Limits

- Contouring or No Contouring of Data Points

When ordering NMRTs, the "Calendar Date of Equator Crossing" and "Map type and Map Scale" can be omitted.

Beginning and ending times of data in GMT can be interpolated using Table 4-1 which gives the elapsed time from either ascending or descending node as a function of latitude. These elapsed time values can be appropriately added or subtracted from node times given in Table 2-2.

A complete description of the THIR experiment may be found in The Nimbus 6 User's Guide, Section 2.

Table 4-1

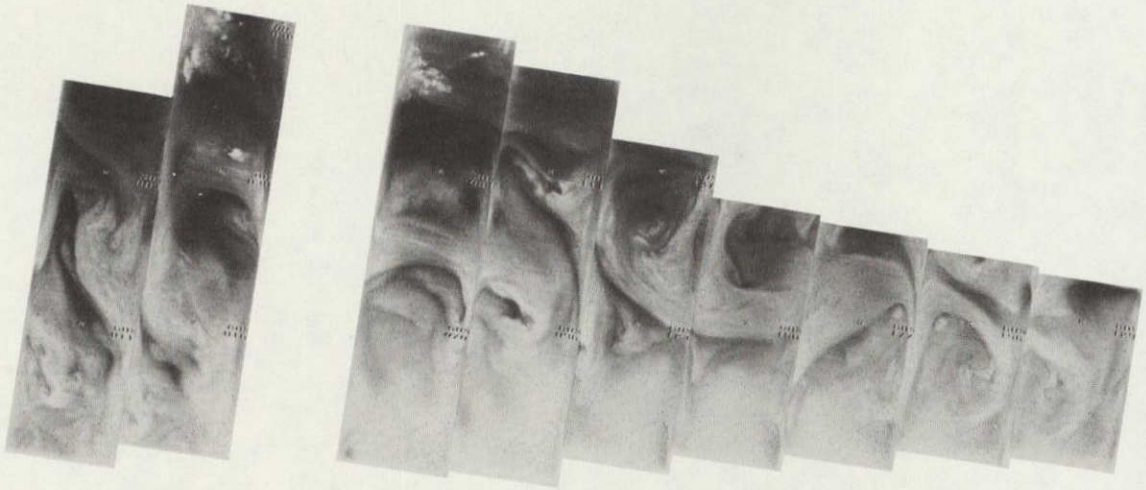
Latitude Versus Minutes From
Ascending or Descending Node

Latitude from AN or DN	Minutes and Seconds from AN or DN
0	0:00
5	1:31
10	3:02
15	4:33
20	6:03
25	7:34
30	9:05
35	10:36
40	12:08
45	13:40
50	15:12
55	16:44
60	18:18
65	19:52
70	21:33
75	23:26
78	24:44
80.1	26:49
78	29:00
75	30:09
70	31:51
65	33:35

SECTION 4.1

TEMPERATURE HUMIDITY INFRARED RADIOMETER

NIGHTTIME MONTAGES



5999 5998 5997 5996 5995 5994 5993 5992 5991 5990 5989 5988 5987 5986

1 SEP 76

6.7μm

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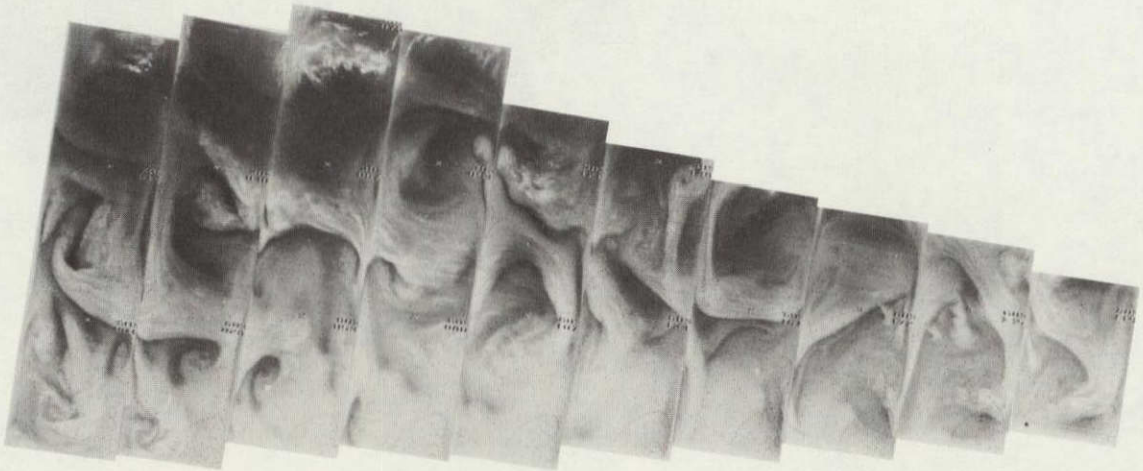
5999 5998 5997 5996 5995 5994 5993 5992 5991 5990 5989 5988 5987 5986

1 SEP 76

11.5μm



6012 6011 6010 6009 6008 6007 6006 6005 6004 6003 6002 6001 6000

2 SEP 76

6.7μm

6012 6011 6010 6009 6008 6007 6006 6005 6004 6003 6002 6001 6000

2 SEP 76

11.5μm

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6025 6024 6023 6022 6021 6020 6019 6018 6017 6016 6015 6014 6013

3 SEP 76

6.7μm

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6025 6024 6023 6022 6021 6020 6019 6018 6017 6016 6015 6014 6013

3 SEP 76

11.5μm

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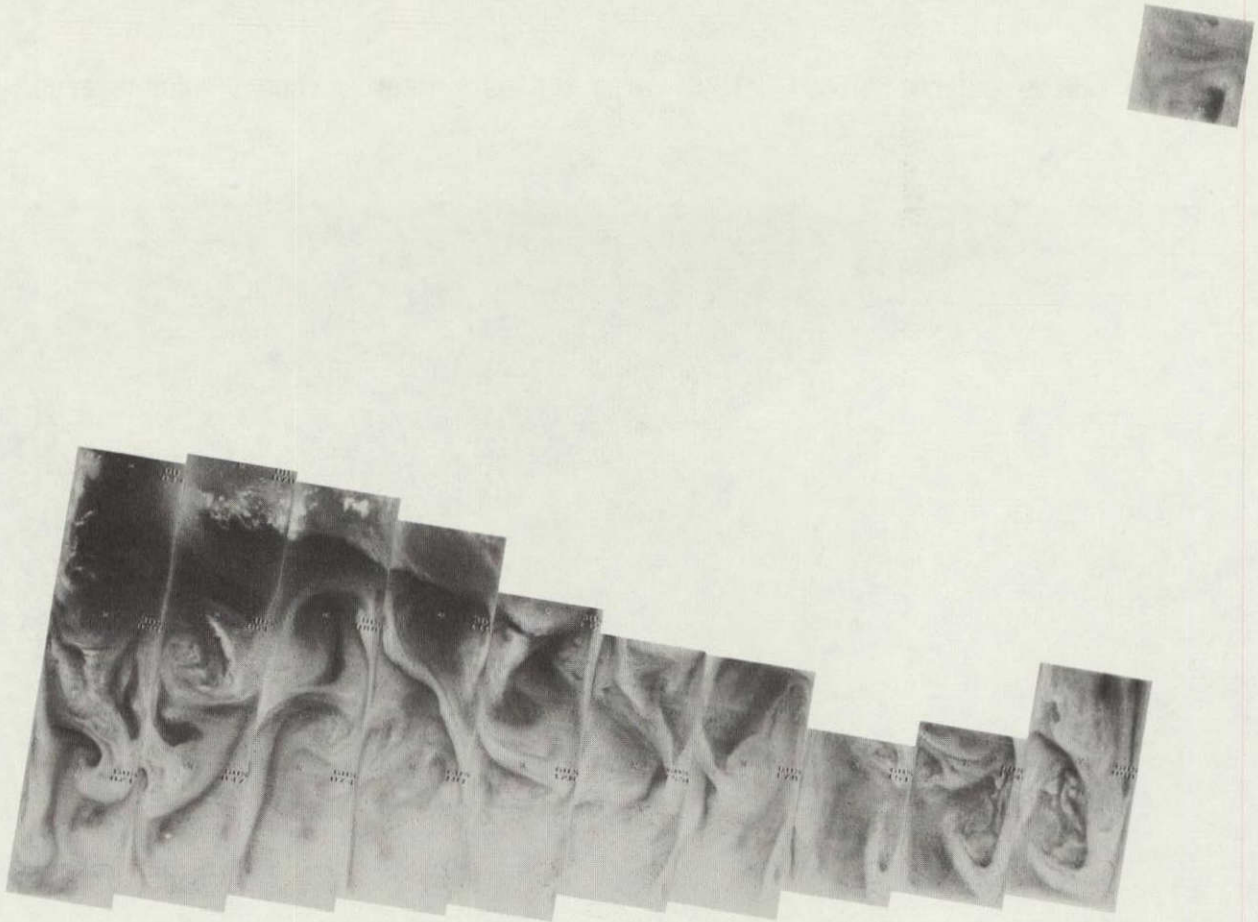

6039 6038 6037 6036 6035 6034 6033 6032 6031 6030 6029 6028 6027 6026

4 SEP 76

6.7μm

6039 6038 6037 6036 6035 6034 6033 6032 6031 6030 6029 6028 6027 6026

4 SEP 76

11.5μm

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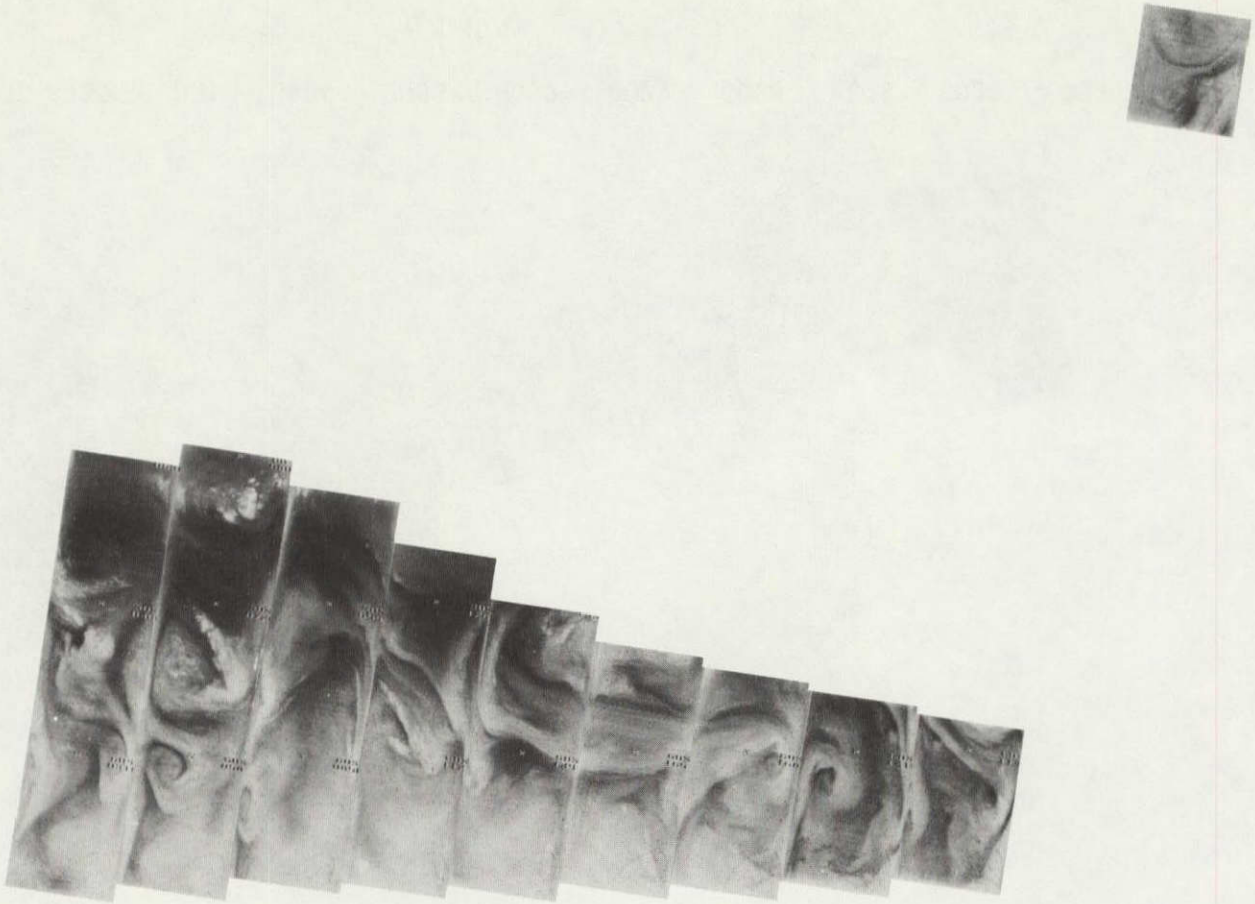

6052 6051 6050 6049 6048 6047 6046 6045 6044 6043 6042 6041 6040

5 SEP 76

6.7μm

6052 6051 6050 6049 6048 6047 6046 6045 6044 6043 6042 6041 6040

5 SEP 76

11.5μm

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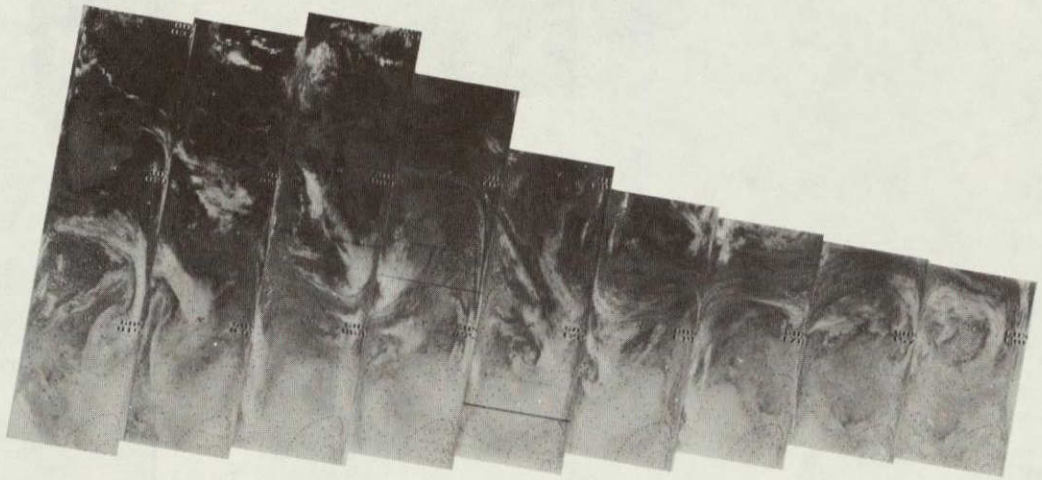
6066 6065 6064 6063 6062 6061 6060 6059 6058 6057 6056 6055 6054 6053

6 SEP 76

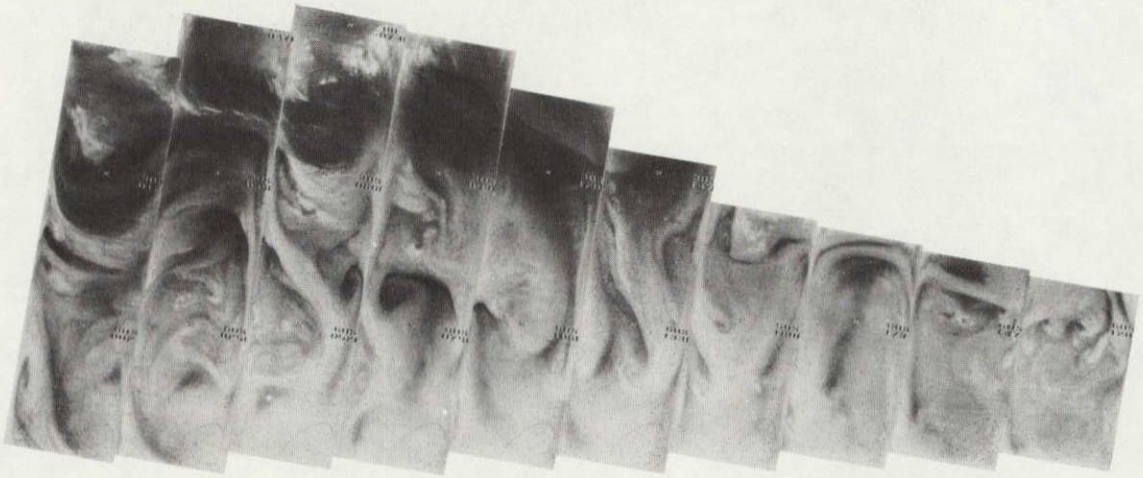
6.7μm



6066 6065 6064 6063 6062 6061 6060 6059 6058 6057 6056 6055 6054 6053

6 SEP 76

11.5μm



6079 6078 6077 6076 6075 6074 6073 6072 6071 6070 6069 6068 6067

7 SEP 76

6.7μm

6079 6078 6077 6076 6075 6074 6073 6072 6071 6070 6069 6068 6067

7 SEP 76

11.5μm

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6092 6091 6090 6089 6088 6087 6086 6085 6084 6083 6082 6081 6080

8 SEP 76

6.7μm

ORIGINAL PAGE IS
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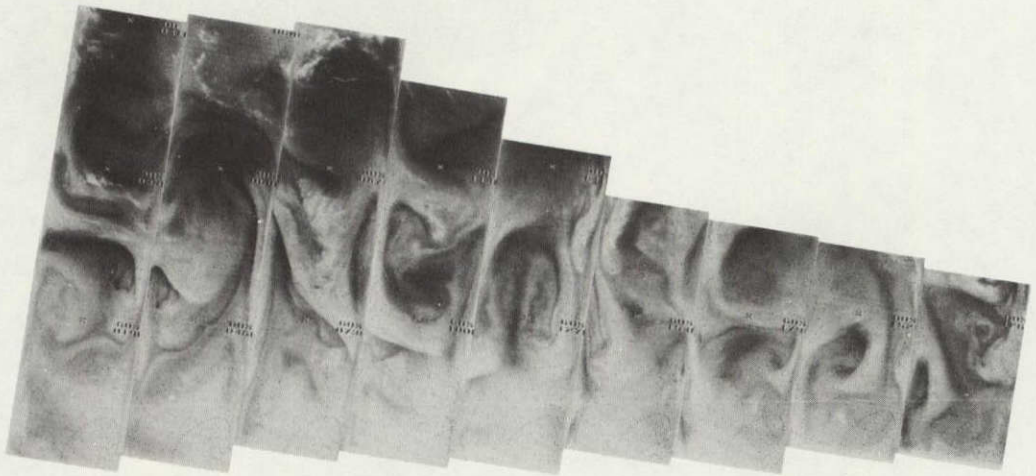
6092 6091 6090 6089 6088 6087 6086 6085 6084 6083 6082 6081 6080

8 SEP 76

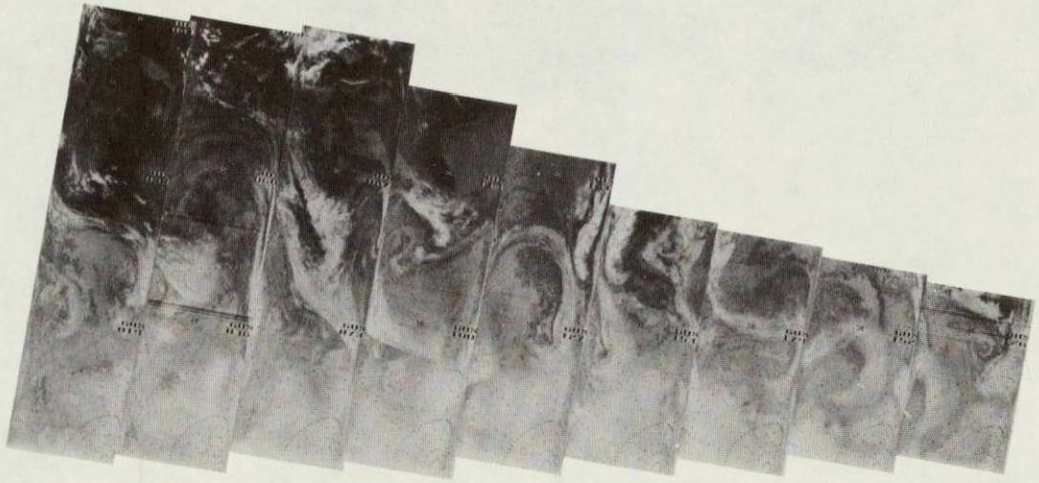
11.5μm



6106 6105 6104 6103 6102 6101 6100 6099 6098 6097 6096 6095 6094 6093

9 SEP 76

6.7μm



6106 6105 6104 6103 6102 6101 6100 6099 6098 6097 6096 6095 6094 6093

9 SEP 76

11.5μm

6119 6118 6117 6116 6115 6114 6113 6112 6111 6110 6109 6108 6107

10 SEP 76

6.7μm

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6119 6118 6117 6116 6115 6114 6113 6112 6111 6110 6109 6108 6107

10 SEP 76

11.5μm

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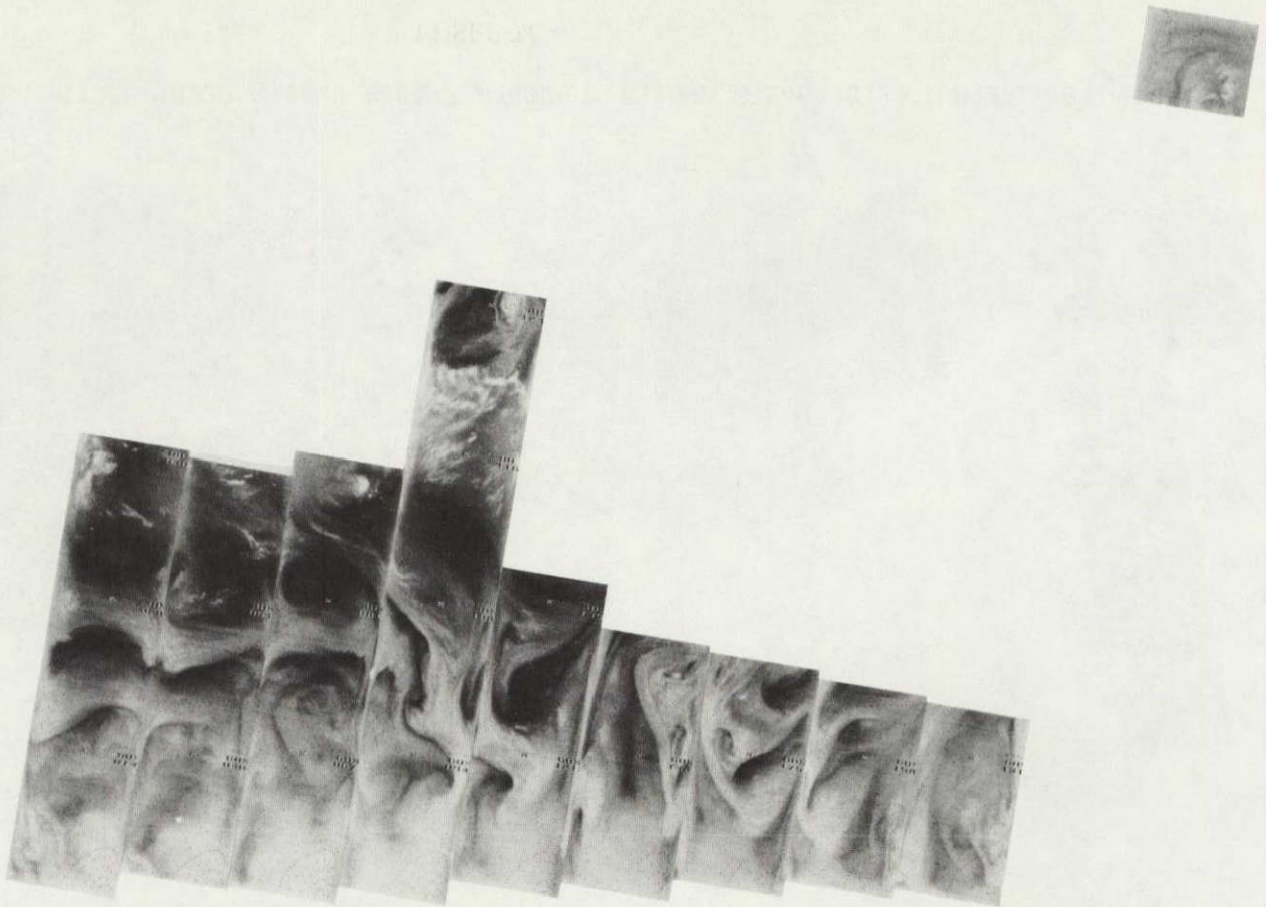
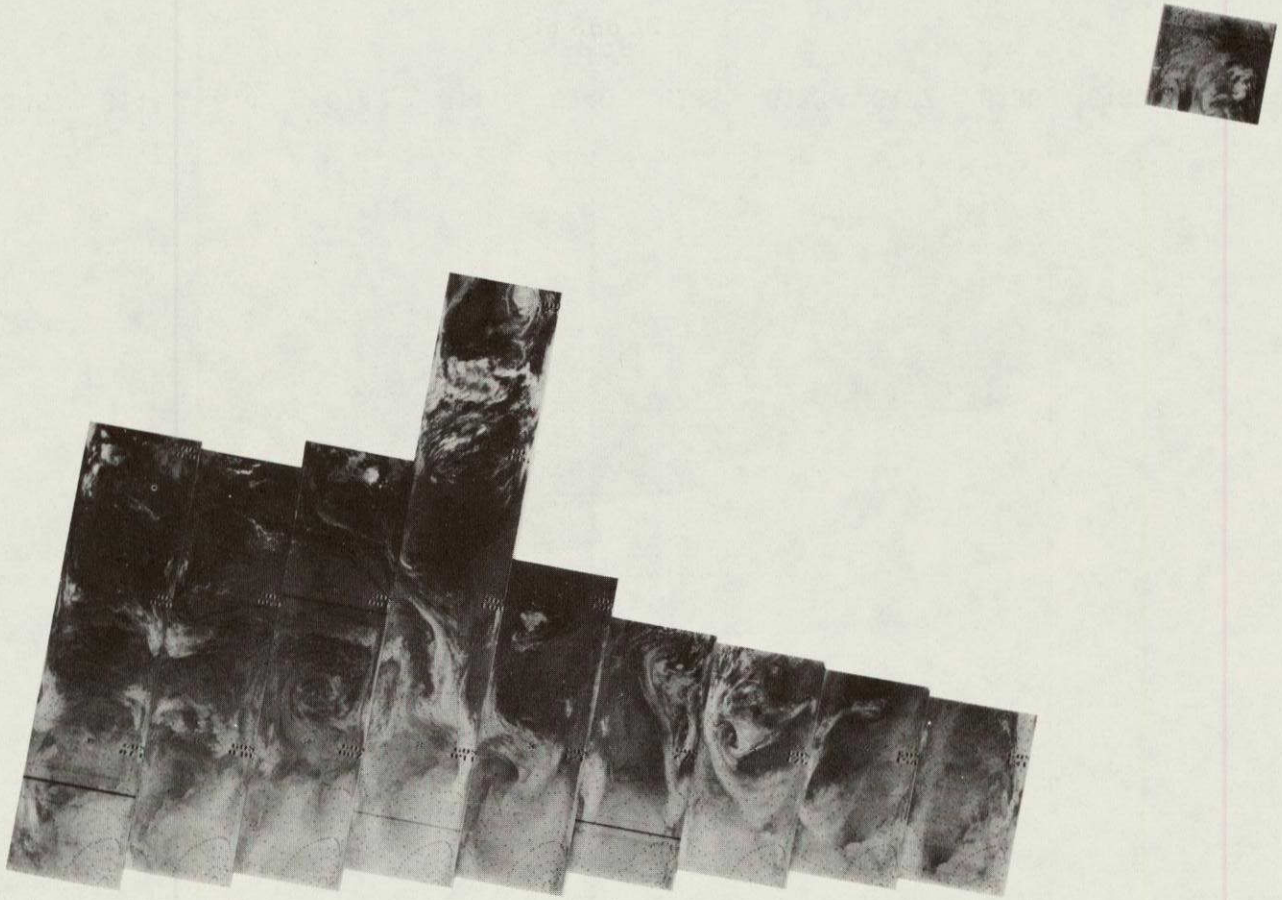


6133 6132 6131 6130 6129 6128 6127 6126 6125 6124 6123 6122 6121 6120

11 SEP 76

6.7μm



6133 6132 6131 6130 6129 6128 6127 6126 6125 6124 6123 6122 6121 6120

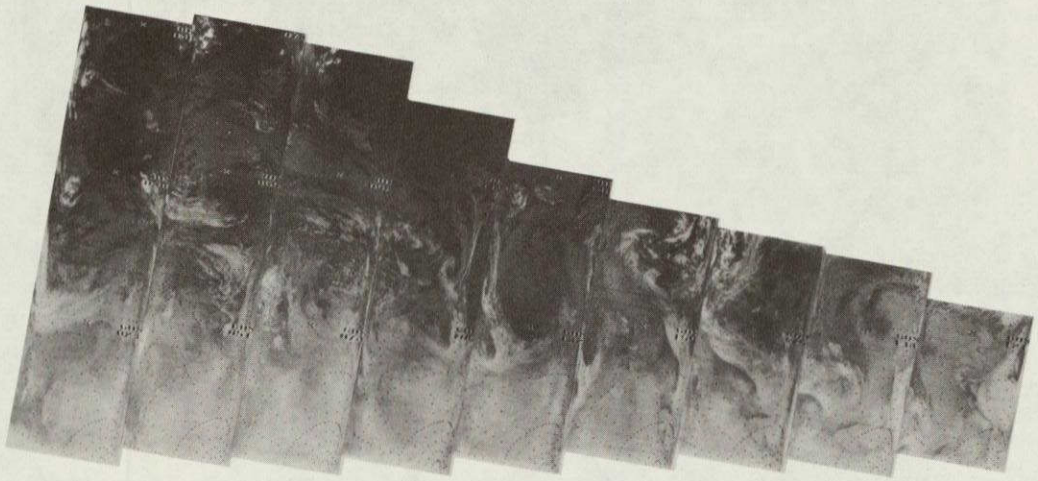
11 SEP 76

11.5μm

6146 6145 6144 6143 6142 6141 6140 6139 6138 6137 6136 6135 6134

12 SEP 76

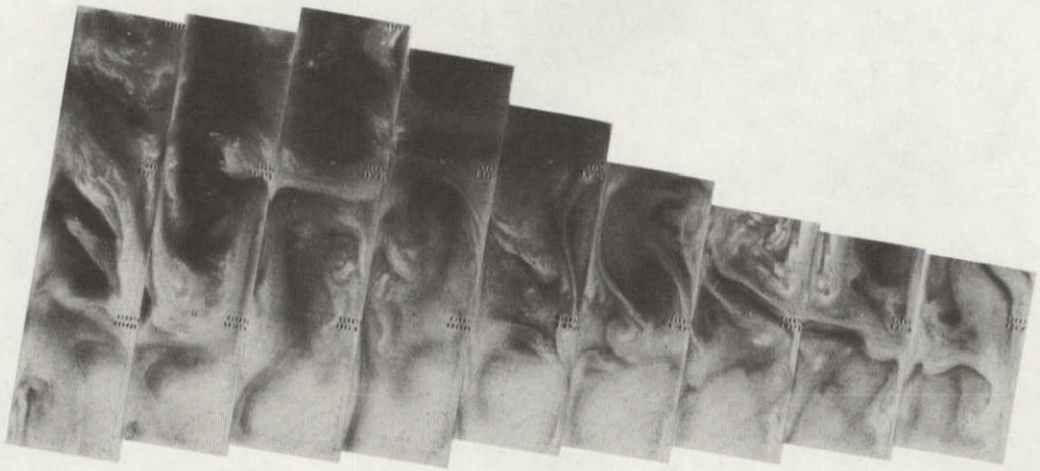
6.7μm



6146 6145 6144 6143 6142 6141 6140 6139 6138 6137 6136 6135 6134

12 SEP 76

11.5μm



6159 6158 6157 6156 6155 6154 6153 6152 6151 6150 6149 6148 6147

13 SEP 76

6.7μm

6159 6158 6157 6156 6155 6154 6153 6152 6151 6150 6149 6148 6147

13 SEP 76

11.5μm

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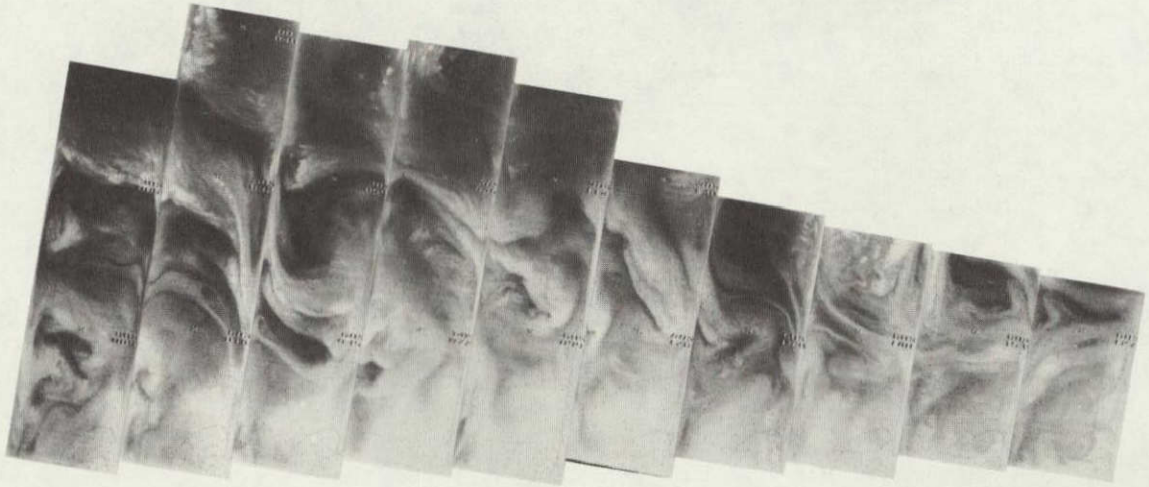

6173 6172 6171 6170 6169 6168 6167 6166 6165 6164 6163 6162 6161 6160

14 SEP 76

6.7μm

C-E

6173 6172 6171 6170 6169 6168 6167 6166 6165 6164 6163 6162 6161 6160

14 SEP 76

11.5μm

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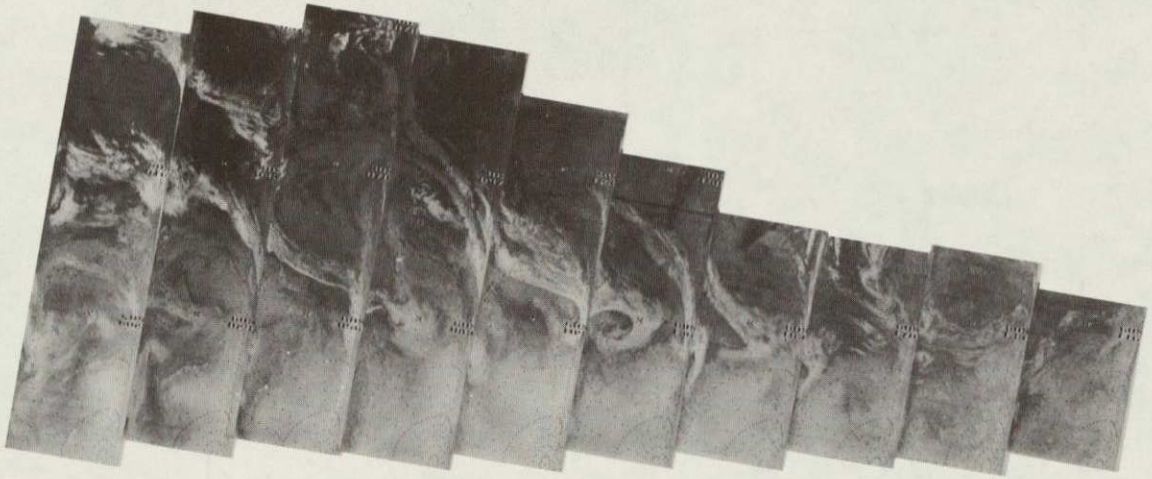
6186 6185 6184 6183 6182 6181 6180 6179 6178 6177 6176 6175 6174

15 SEP 76

6.7μm



6186 6185 6184 6183 6182 6181 6180 6179 6178 6177 6176 6175 6174

15 SEP 76

11.5μm

ORIGINAL PAGE IS
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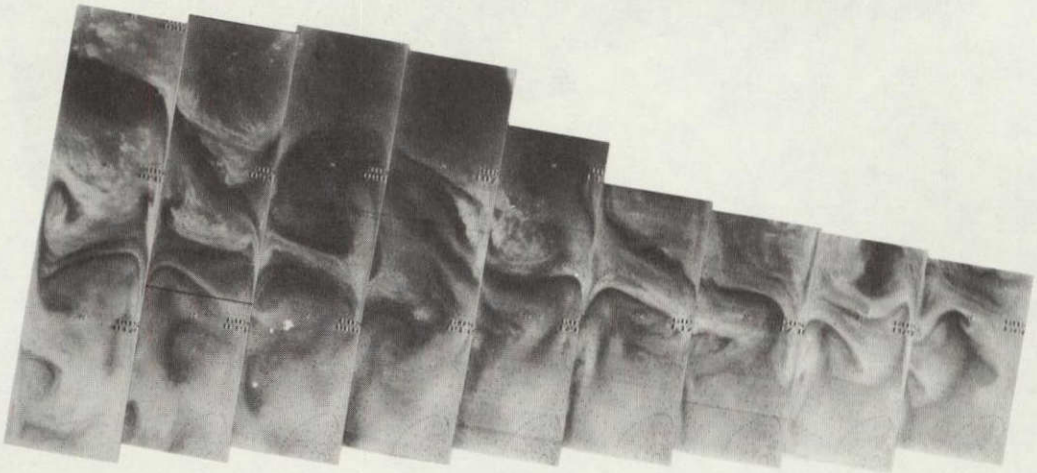

6199 6198 6197 6196 6195 6194 6193 6192 6191 6190 6189 6188 6187

16 SEP 76

6.7μm

6199 6198 6197 6196 6195 6194 6193 6192 6191 6190 6189 6188 6187

16 SEP 76

11.5μm

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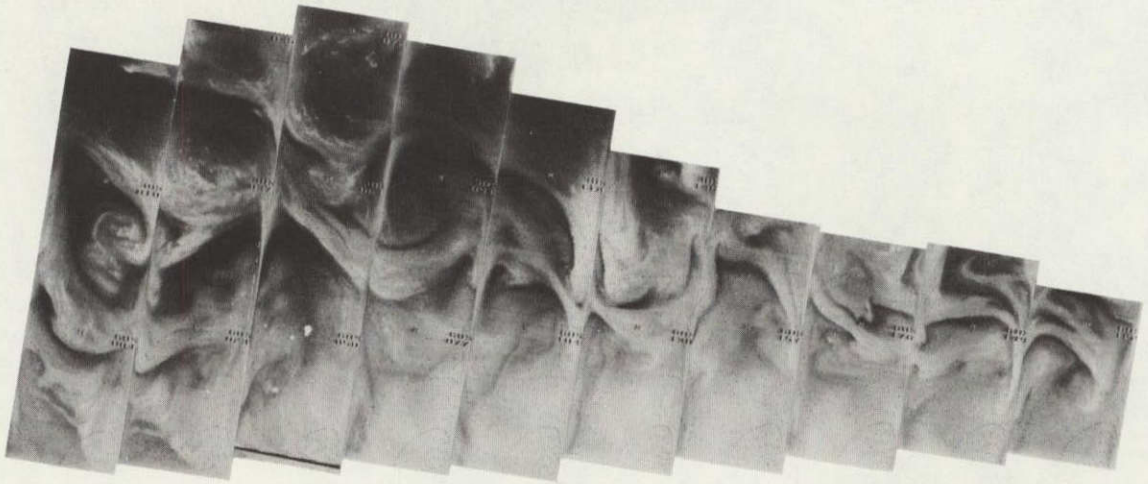

6213 6212 6211 6210 6209 6208 6207 6206 6205 6204 6203 6202 6201 6200

17 SEP 76

6.7μm

6213 6212 6211 6210 6209 6208 6207 6206 6205 6204 6203 6201 6200

17 SEP 76

11.5μm

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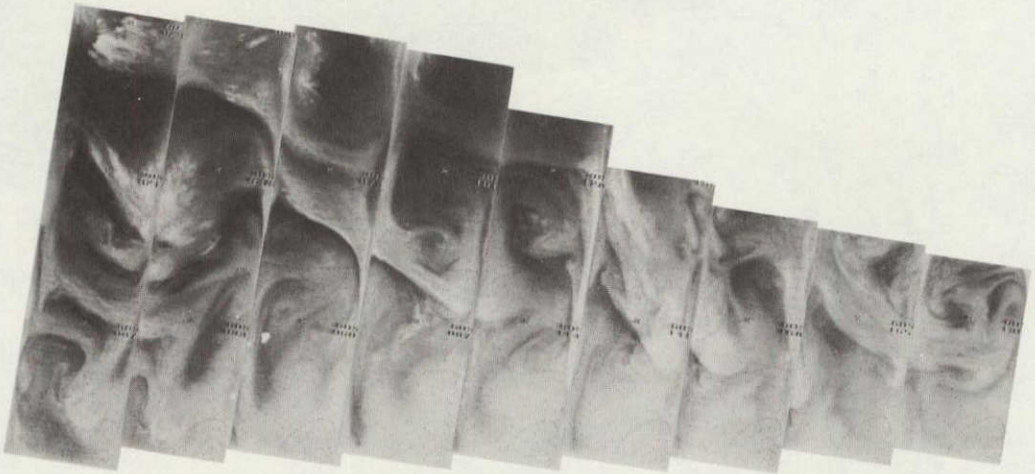

6226 6225 6224 6223 6222 6221 6220 6219 6218 6217 6216 6215 6214

18 SEP 76

6.7μm

6226 6225 6224 6223 6222 6221 6220 6219 6218 6217 6216 6215 6214

18 SEP 76

11.5μm

ORIGINAL PAGE IS
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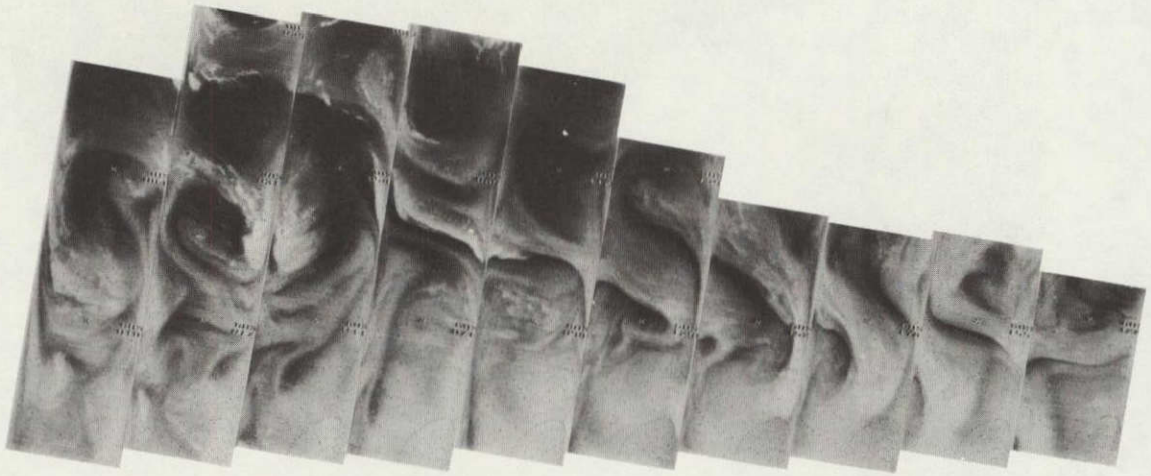

6240 6239 6328 6237 6236 6235 6234 6233 6232 6231 6230 6229 6228 6227

19 SEP 76

6.7μm

6240 6239 6328 6237 6236 6235 6234 6233 6232 6231 6230 6229 6228 6227

19 SEP 76

11.5μm

ORIGINAL PAGE IS
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6253 6252 6251 6250 6249 6248 6247 6246 6245 6244 6243 6242 6241

20 SEP 76

6.7μm

6253 6252 6251 6250 6249 6248 6247 6246 6245 6244 6243 6242 6241

20 SEP 76

11.5μm

ORIGINAL PAGE IS
OF POOR QUALITY

6266 6265 6264 6263 6262 6261 6260 6259 6258 6257 6256 6255 6254

21 SEP 76

6.7μm

6266 6265 6264 6263 6262 6261 6260 6259 6258 6257 6256 6255 6254

21 SEP 76

11.5μm

ORIGINAL PAGE IS
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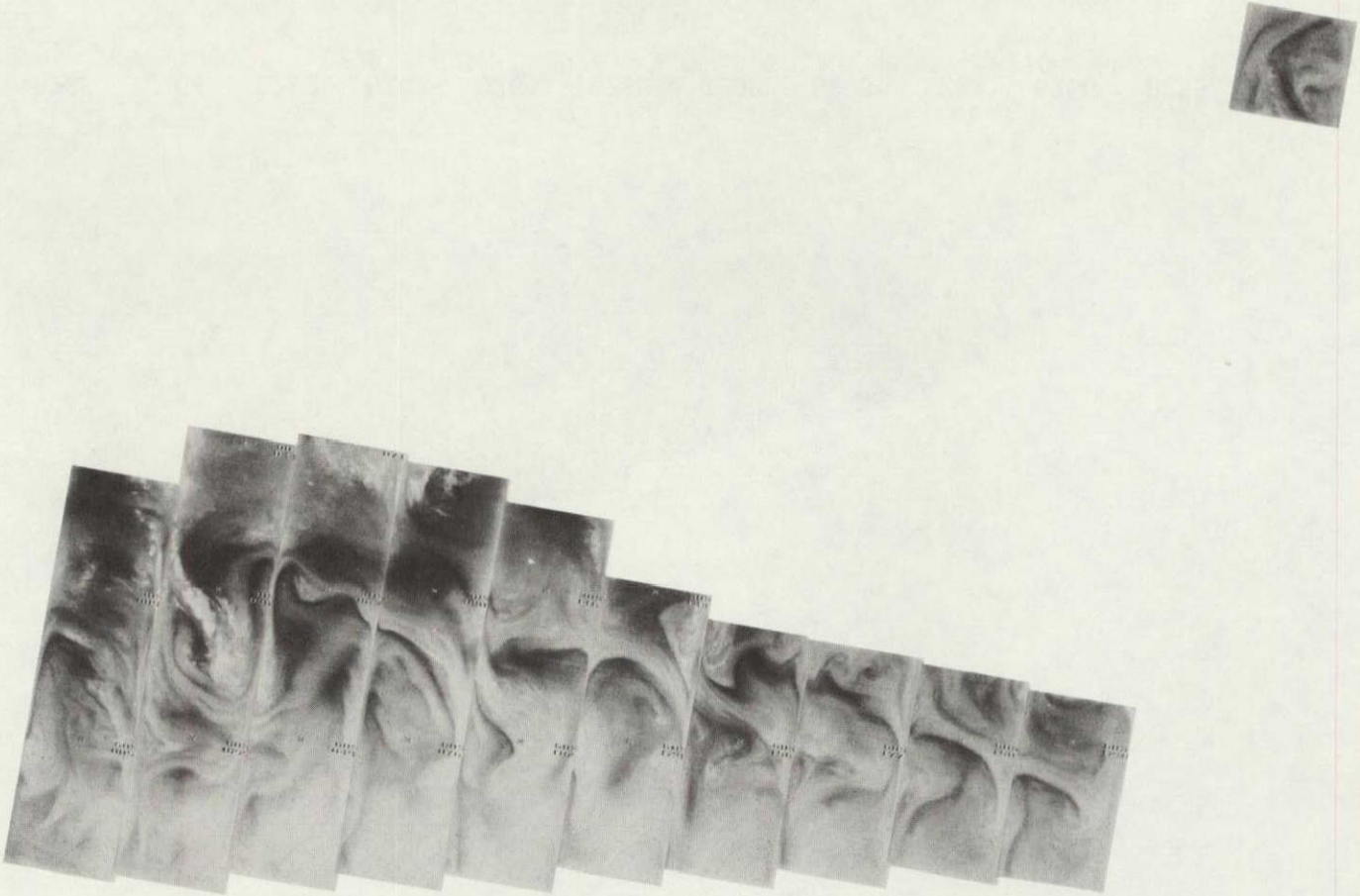
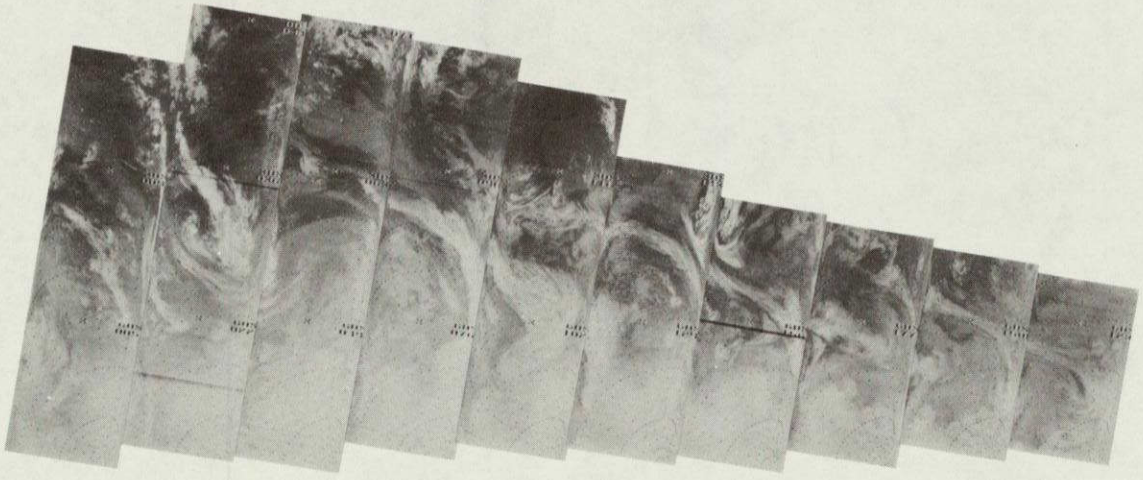


6280 6279 6278 6277 6276 6275 6274 6273 6272 6271 6270 6269 6268 6267

22 SEP 76

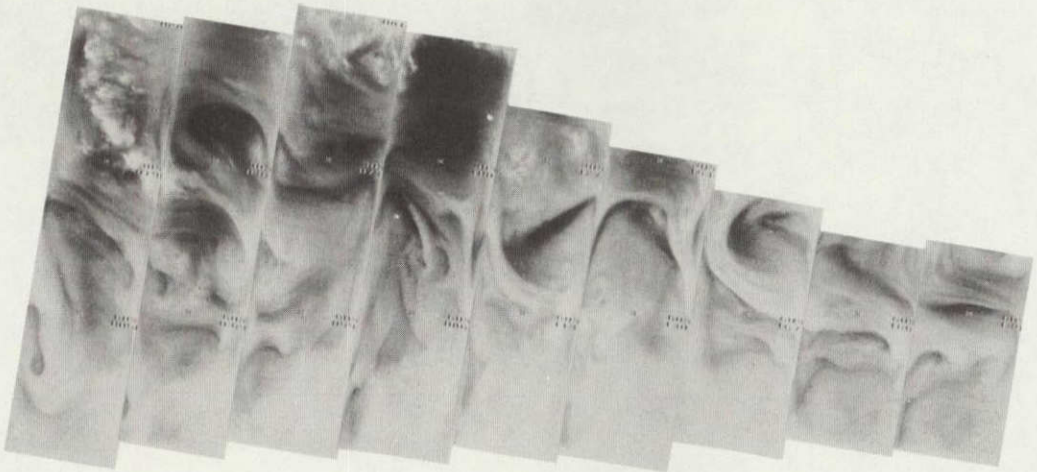
6.7μm



6280 6279 6278 6277 6276 6275 6274 6273 6272 6271 6270 6269 6268 6267

22 SEP 76

11.5μm



6293 6292 6291 6290 6289 6288 6287 6286 6285 6284 6283 6282 6281

23 SEP 76

6.7μm

6293 6292 6291 6290 6289 6288 6287 6286 6285 6284 6283 6282 6281

23 SEP 76

11.5μm

ORIGINAL PAGE IS
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6307 6306 6305 6304 6303 6302 6301 6300 6299 6298 6297 6296 6295 6294

24 SEP 76

6.7μm

6307 6306 6305 6304 6303 6302 6301 6300 6299 6298 6297 6296 6295 6294

24 SEP 76

11.5μm

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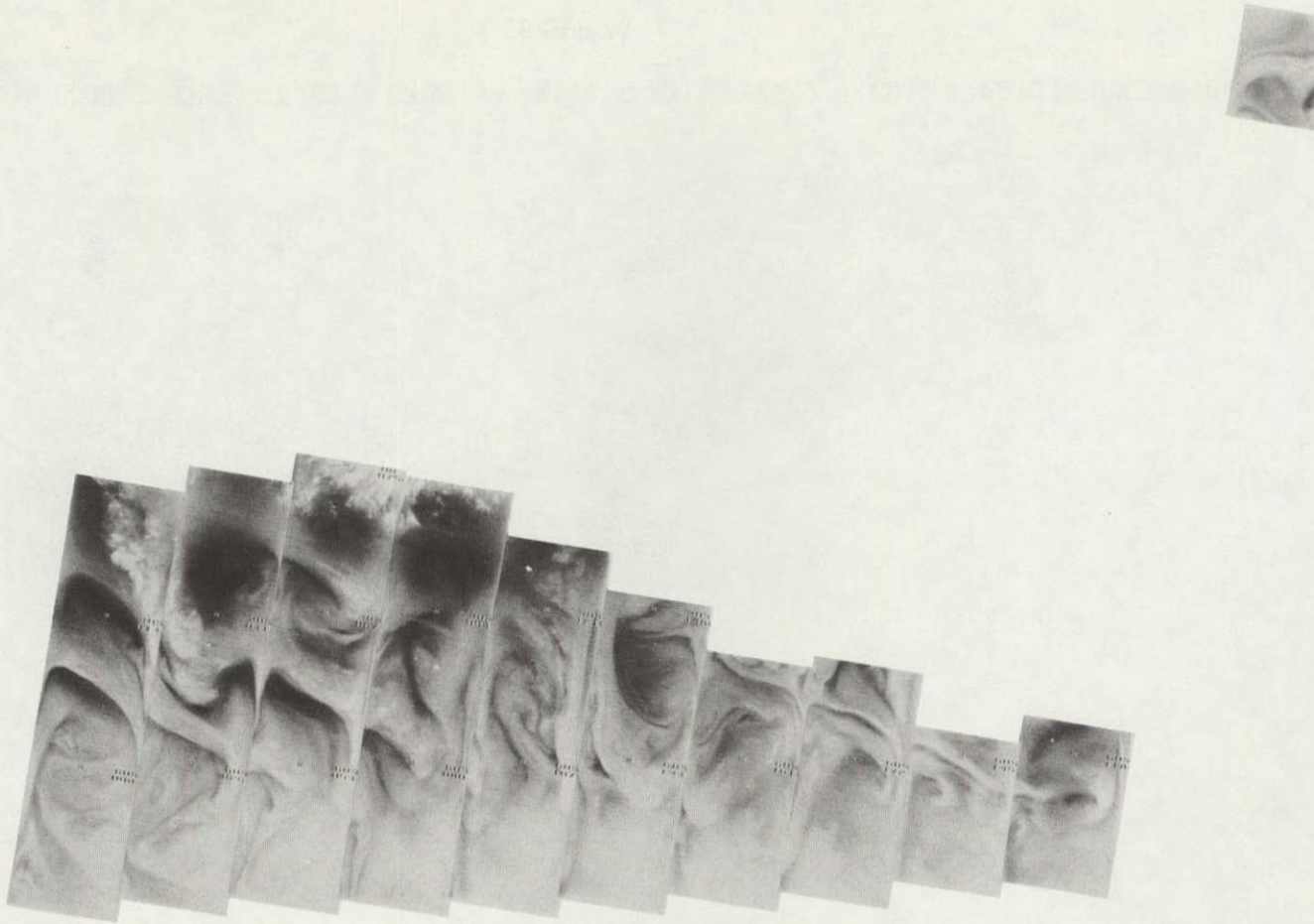

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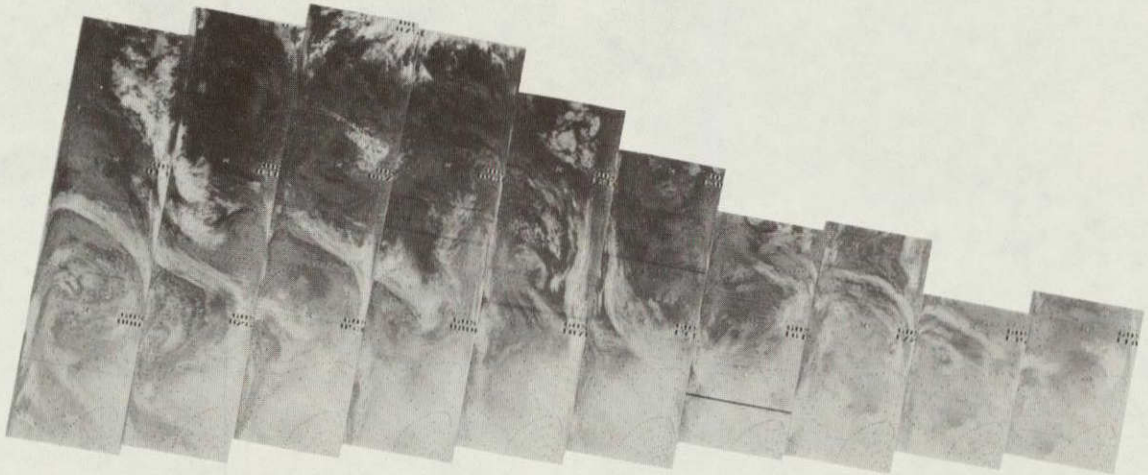
25 SEP 76

6.7μm



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25 SEP 76

11.5μm

6333 6332 6331 6330 6329 6328 6327 6326 6325 6324 6323 6322 6321

26 SEP 76

6.7μm

6333 6332 6331 6330 6329 6328 6327 6326 6325 6324 6323 6322 6321

26 SEP 76

11.5μm

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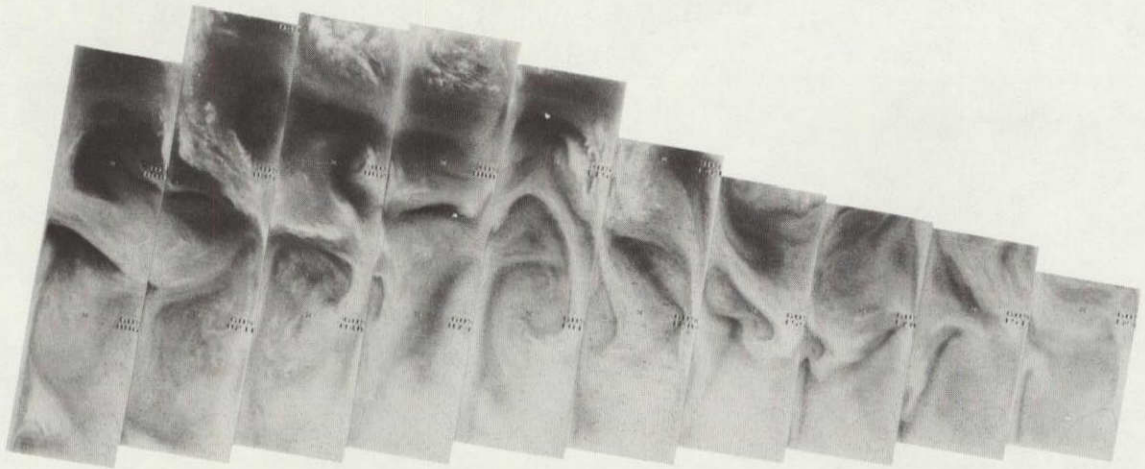

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27 SEP 76

6.7μm

6347 6346 6345 6344 6343 6342 6341 6340 6339 6338 6337 6336 6335 6334

27 SEP 76

11.5μm

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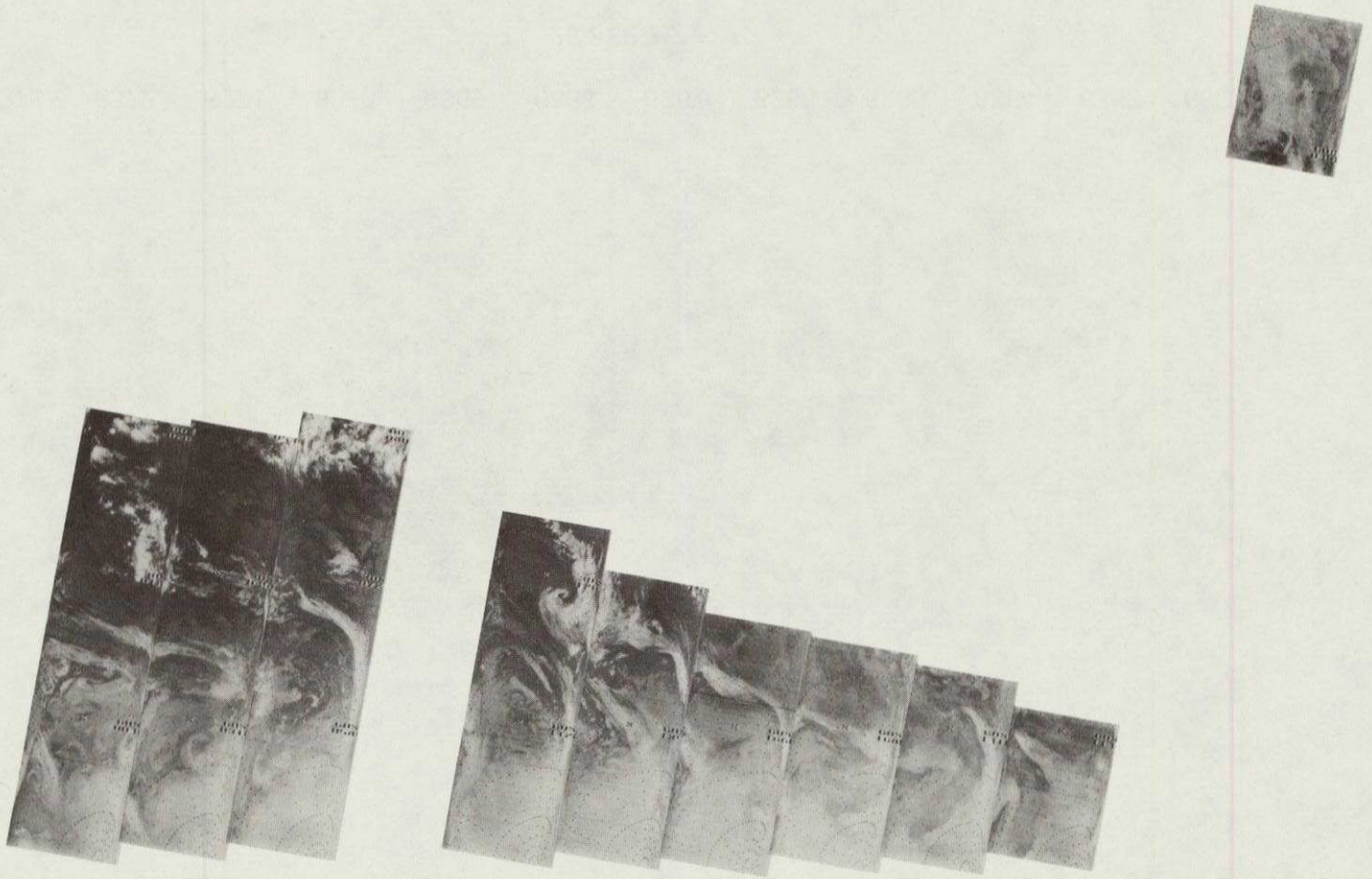
28 SEP 76

6.7μm



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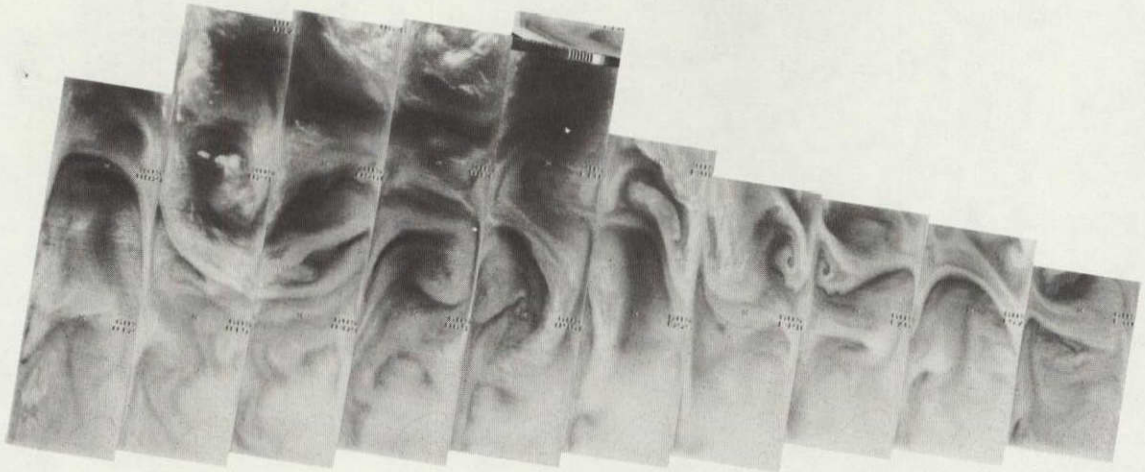
28 SEP 76

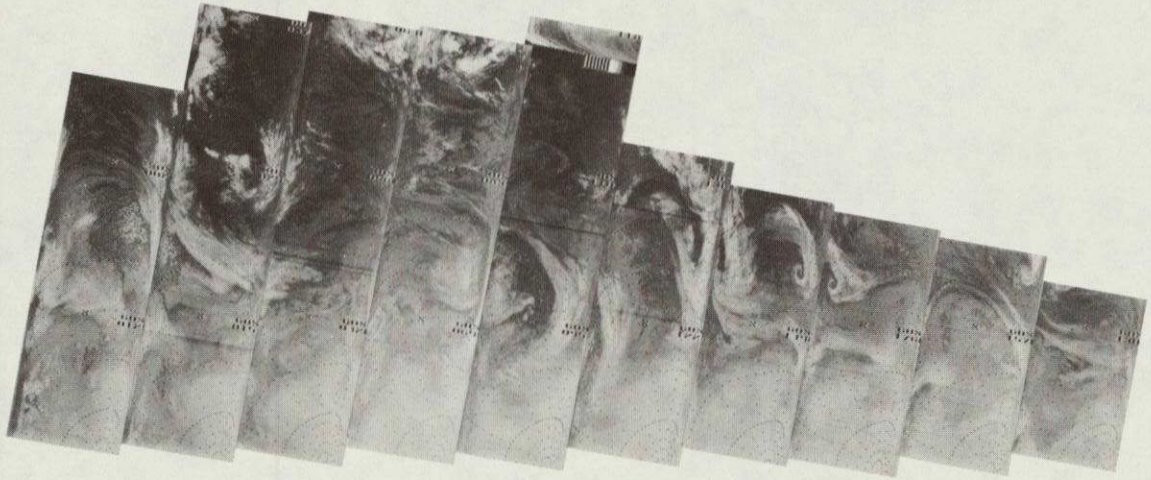
11.5μm



6374 6373 6372 6371 6370 6369 6368 6367 6366 6365 6364 6363 6362 6361

29 SEP 76

6.7μm



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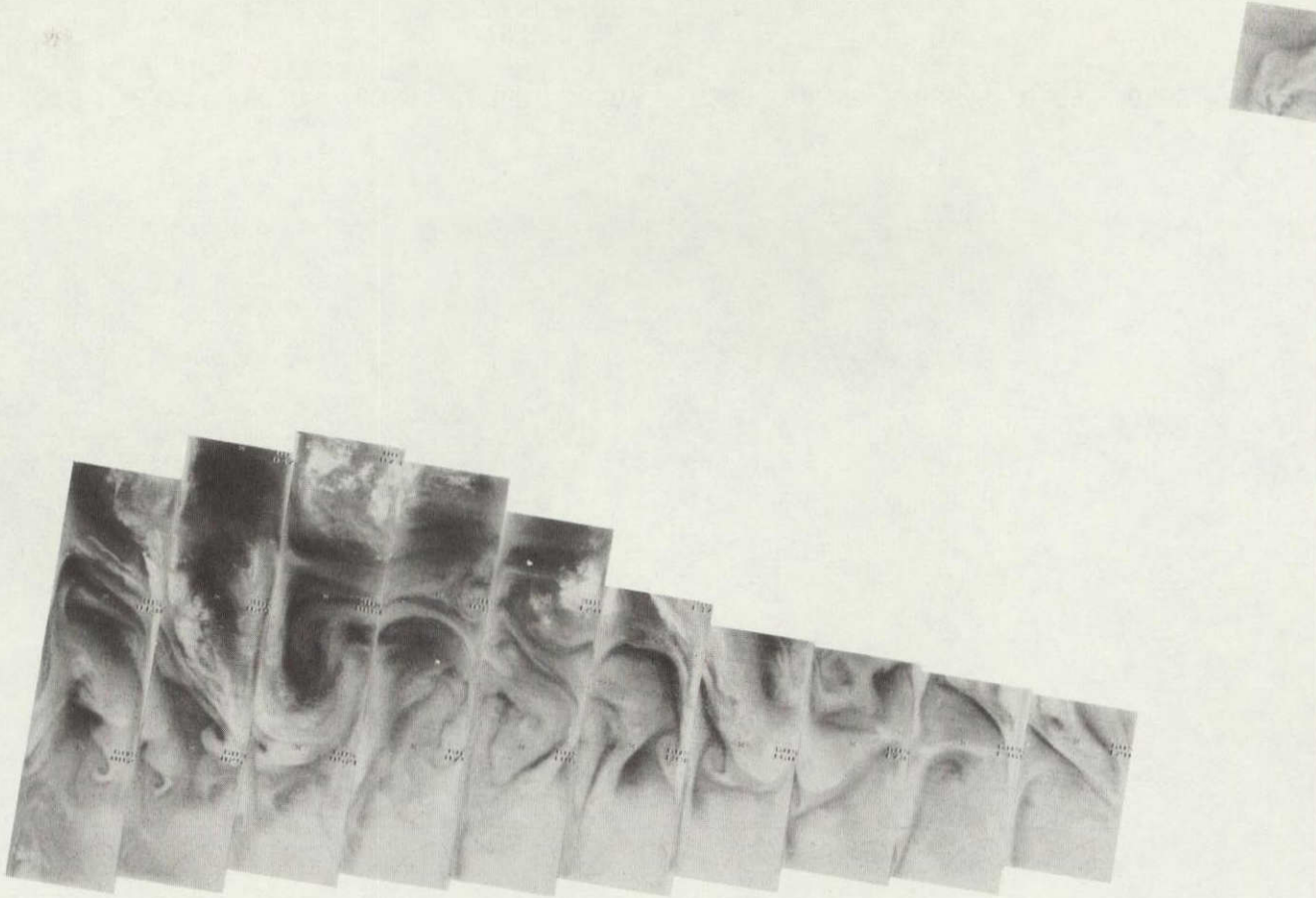
29 SEP 76

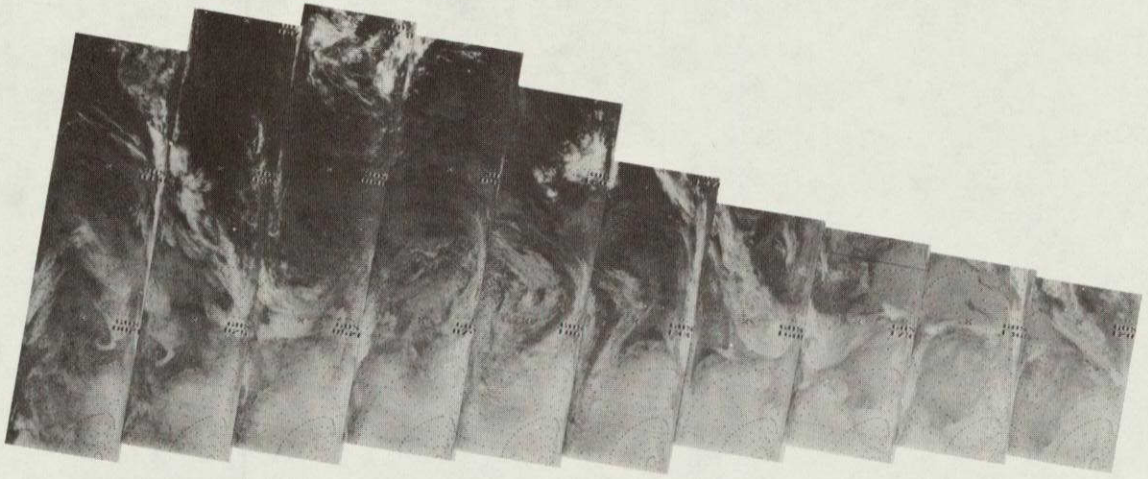
11.5μm



6387 6386 6385 6384 6383 6382 6381 6380 6379 6378 6377 6376 6375

30 SEP 76

6.7μm



6387 6386 6385 6384 6383 6382 6381 6380 6379 6378 6377 6376 6375

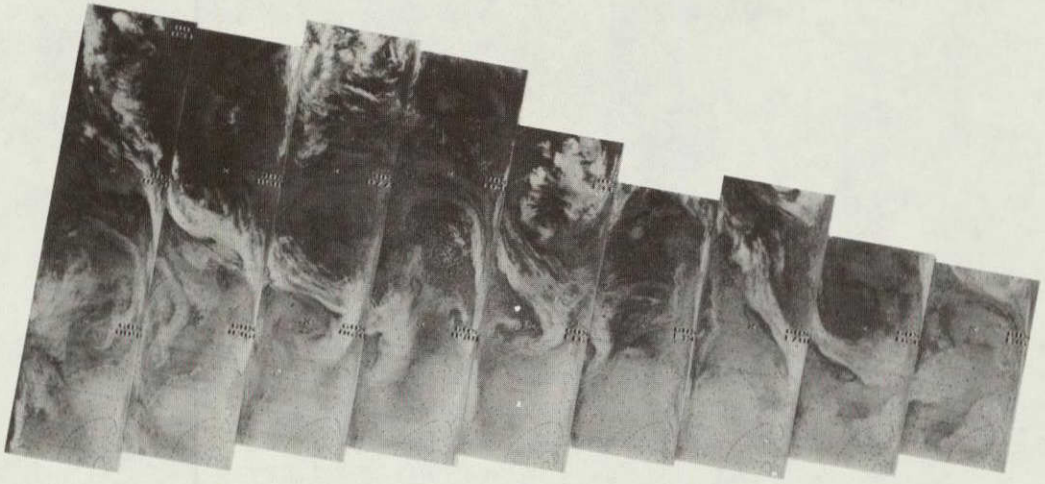
30 SEP 76

11.5μm

6400 6399 6398 6397 6396 6395 6394 6393 6392 6391 6390 6389 6388

1 OCT 76

6.7μm



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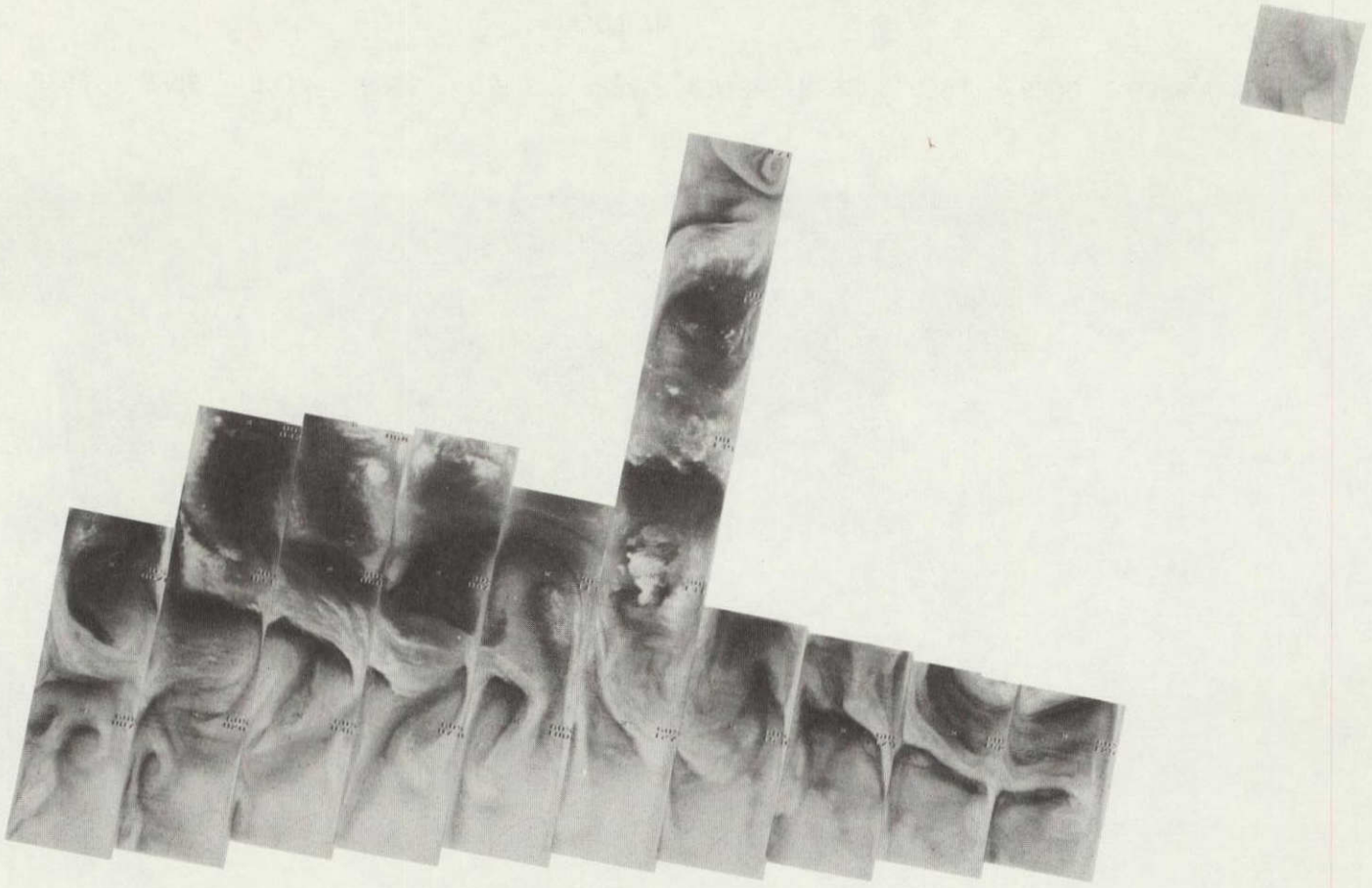
1 OCT 76

11.5μm



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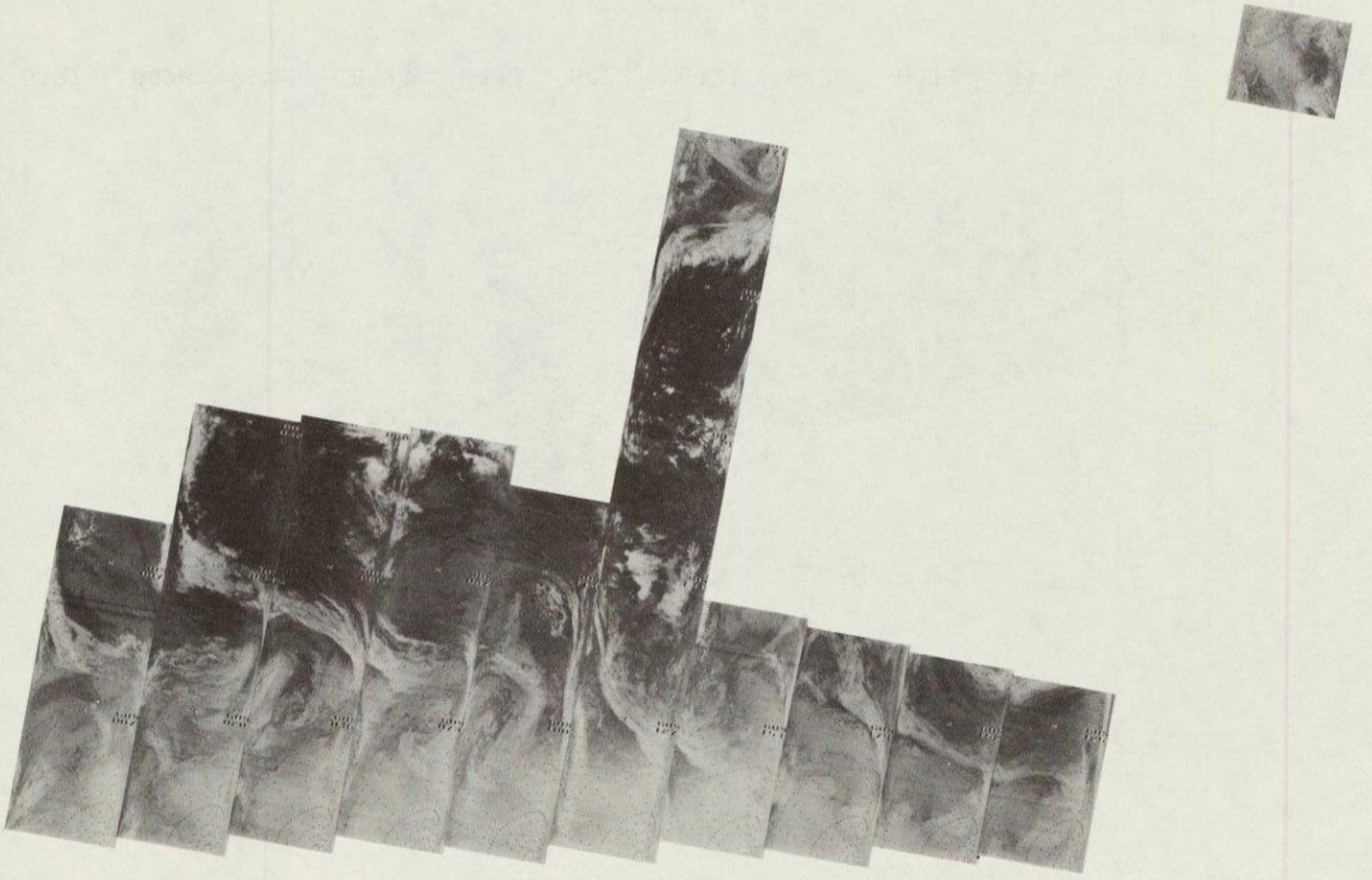
2 OCT 76

6.7μm



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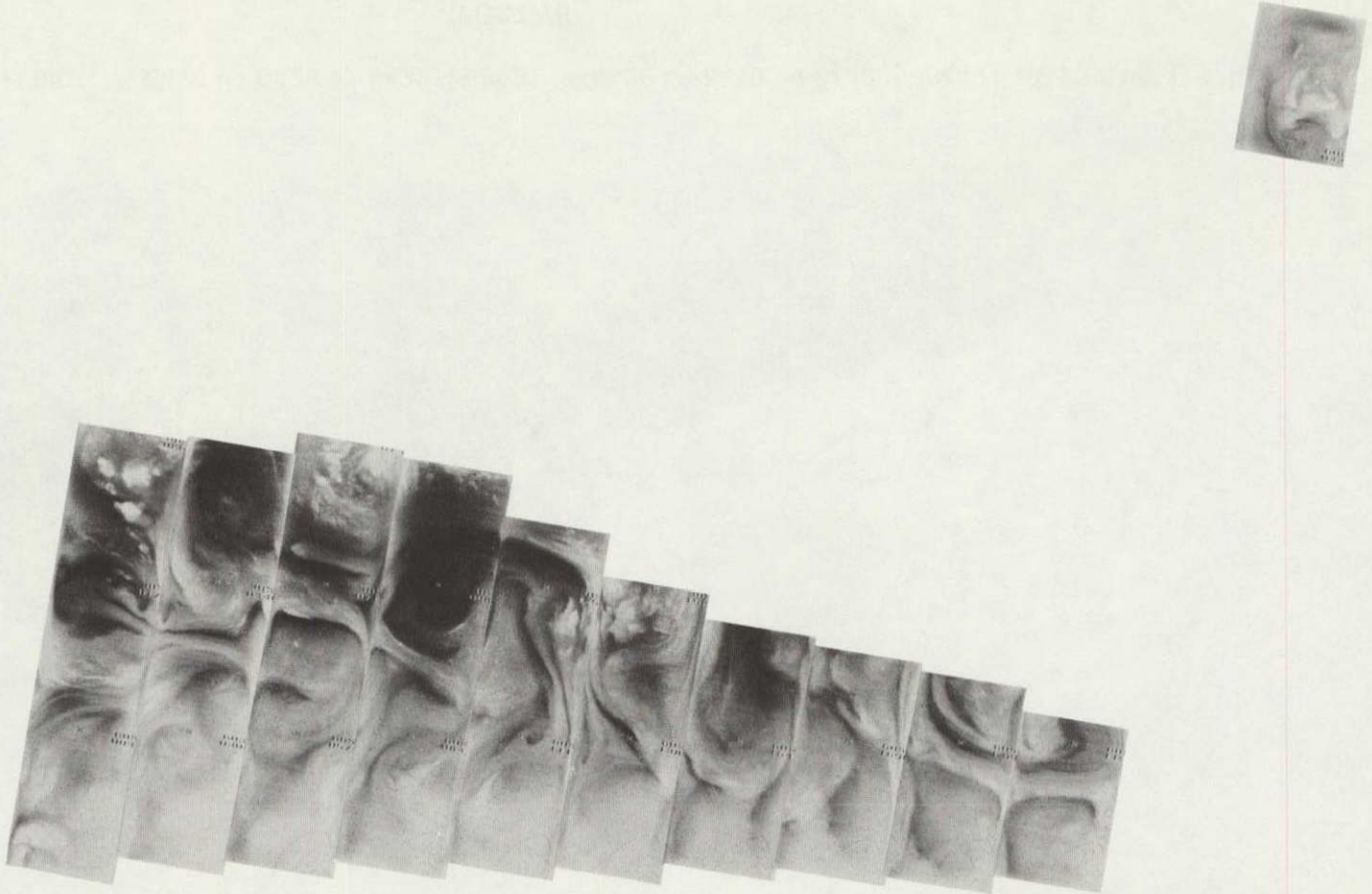
2 OCT 76

11.5μm



6427 6426 6425 6424 6423 6422 6421 6420 6419 6418 6417 6416 6415

3 OCT 76

6.7μm

6427 6426 6425 6424 6423 6422 6421 6420 6419 6418 6417 6416 6415

3 OCT 76

11.5μm

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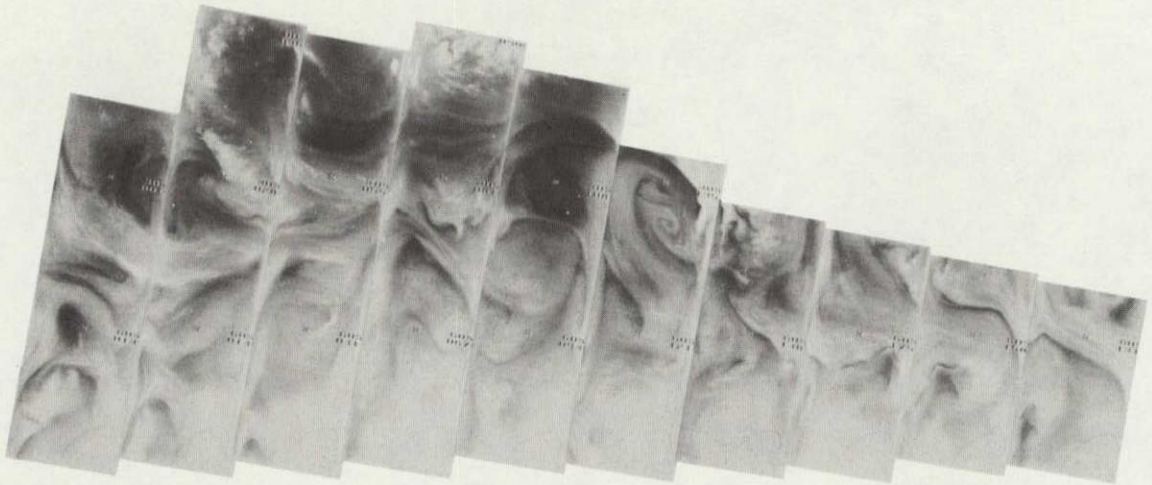

6441 6440 6439 6438 6437 6436 6435 6434 6433 6432 6431 6430 6429 6428

4 OCT 76

6.7μm

6441 6440 6439 6438 6437 6436 6435 6434 6433 6432 6431 6430 6429 6428

4 OCT 76

11.5μm

6454 6453 6452 6451 6450 6449 6448 6447 6446 6445 6444 6443 6442

5 OCT 76

6.7μm

6454 6453 6452 6451 6450 6449 6448 6447 6446 6445 6444 6443 6442

5 OCT 76

11.5μm

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6467 6466 6465 6464 6463 6462 6461 6460 6459 6458 6457 6456 6455

6 OCT 76

6.7μm

6467 6466 6465 6464 6463 6462 6461 6460 6459 6458 6457 6456 6455

6 OCT 76

11.5μm

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6481 6480 6479 6478 6477 6476 6475 6474 6473 6472 6471 6470 6469 6468

7 OCT 76

6.7μm

6481 6480 6479 6478 6477 6476 6475 6474 6473 6472 6471 6470 6469 6468

7 OCT 76

11.5μm

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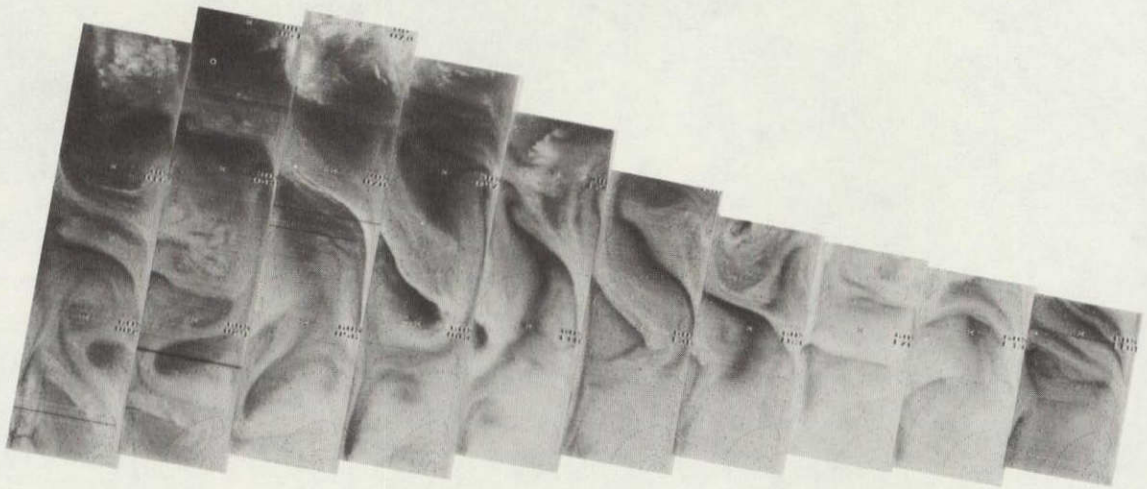


6494 6493 6492 6491 6490 6489 6488 6487 6486 6485 6484 6483 6482

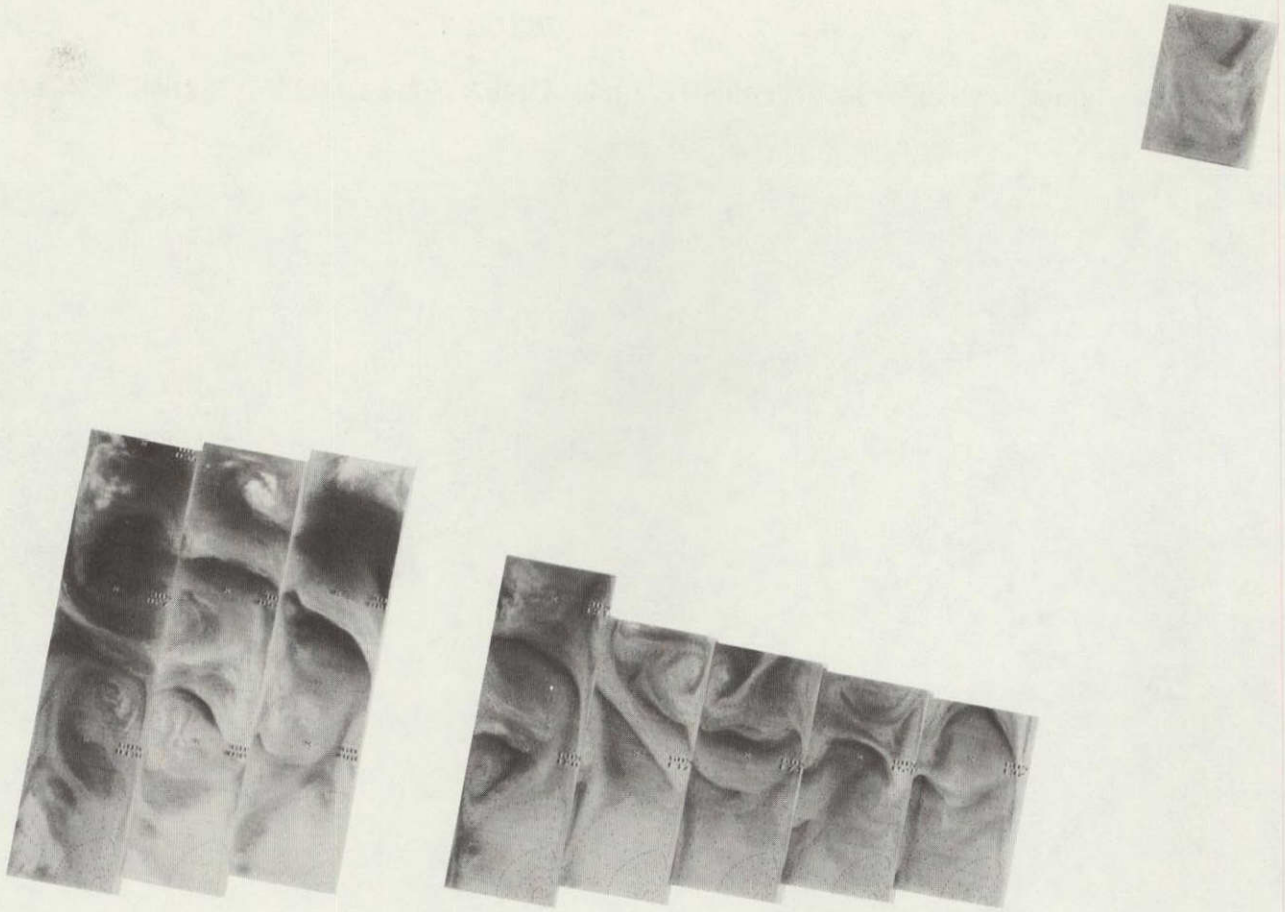
8 OCT 76

6.7μm

6494 6493 6492 6491 6490 6489 6488 6487 6486 6485 6484 6483 6482

8 OCT 76

11.5μm



6507 6506 6505 6504 6503 6502 6501 6500 6499 6498 6497 6496 6495

9 OCT 76

6.7μm

6507 6506 6505 6504 6503 6502 6501 6500 6499 6498 6497 6496 6495

9 OCT 76

11.5μm

6521 6520 6519 6518 6517 6516 6515 6514 6513 6512 6511 6510 6509 6508

10 OCT 76

6.7μm

6521 6520 6519 6518 6517 6516 6515 6514 6513 6512 6511 6510 6509 6508

10 OCT 76

11.5μm

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6534 6533 6532 6531 6530 6529 6528 6527 6526 6525 6524 6523 6522

11 OCT 76

6.7μm

6534 6533 6532 6531 6530 6529 6528 6527 6526 6525 6524 6523 6522

11 OCT 76

11.5μm

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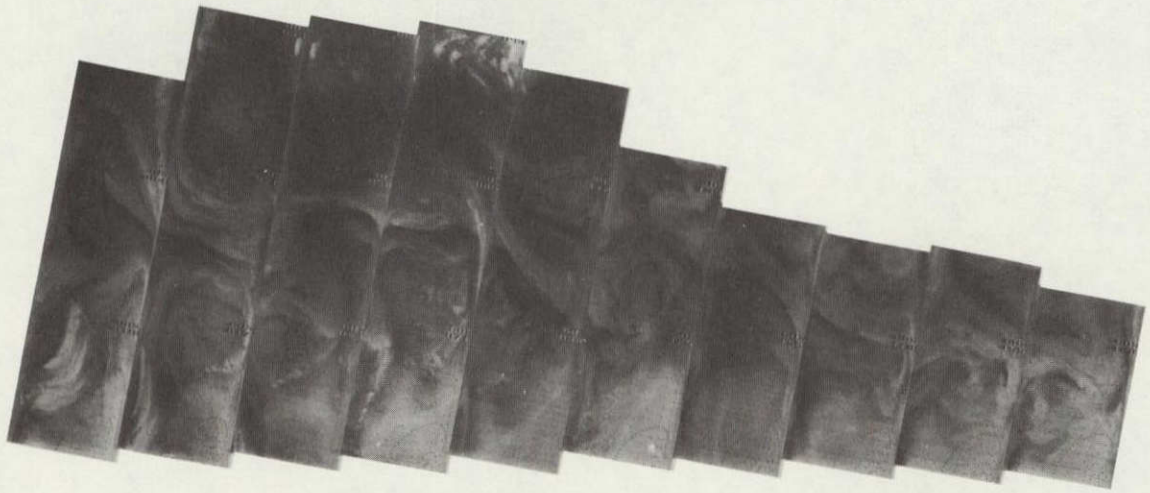
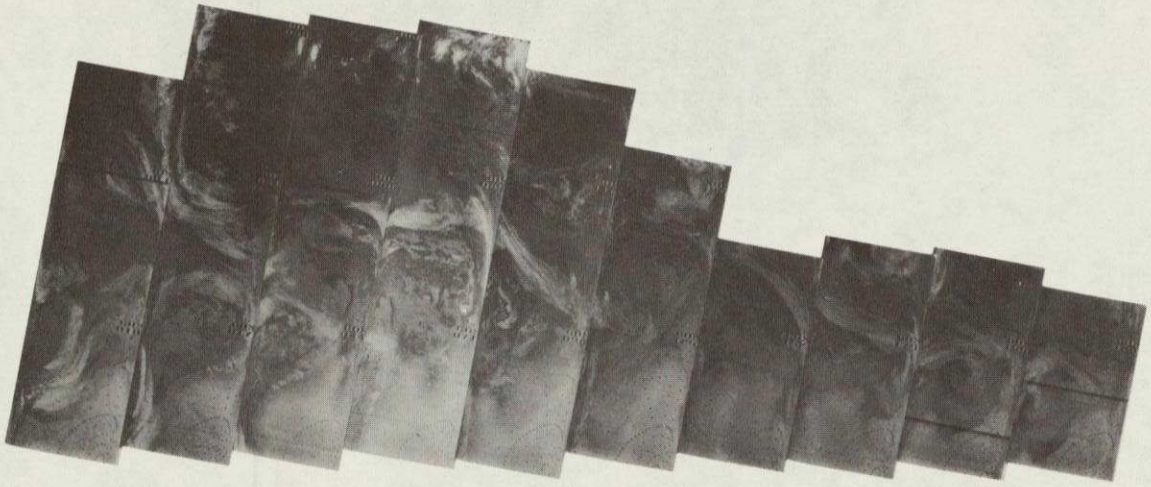


6548 6547 6546 6545 6544 6543 6542 6541 6540 6539 6538 6537 6536 6535

12 OCT 76

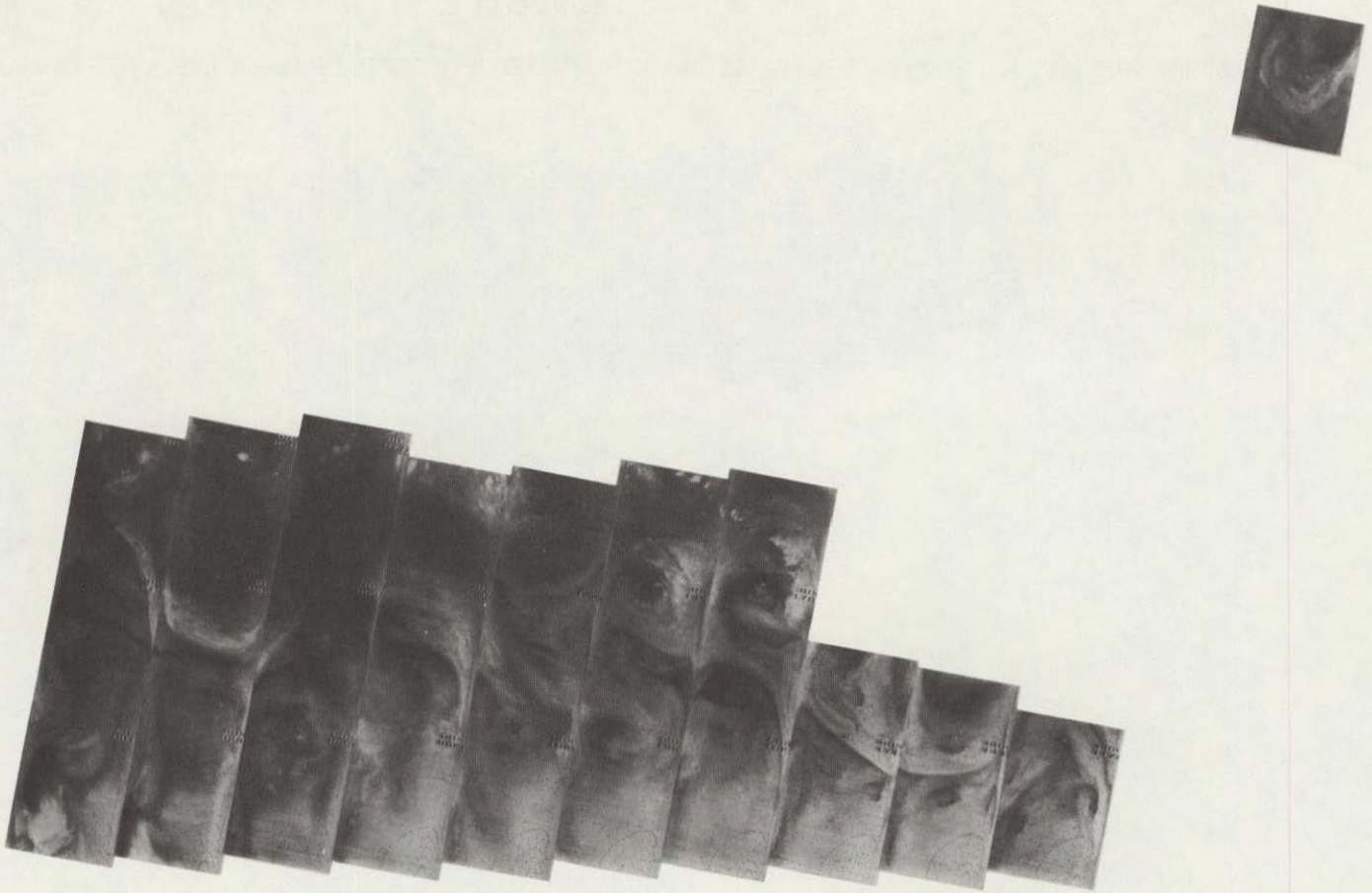
6.7μm



6548 6547 6546 6545 6544 6543 6542 6541 6540 6539 6538 6537 6536 6535

12 OCT 76

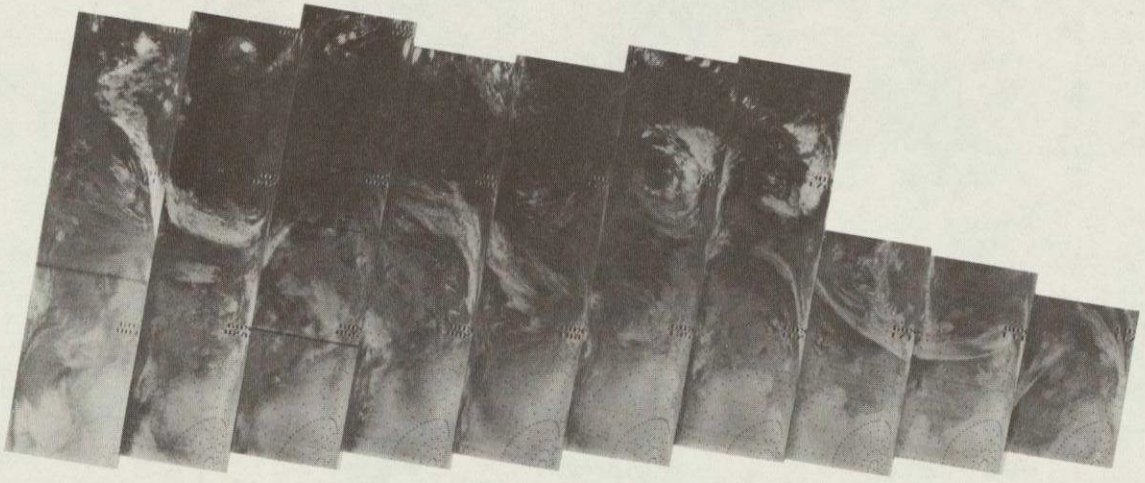
11.5μm



6561 6560 6559 6558 6557 6556 6555 6554 6553 6552 6551 6550 6549

13 OCT 76

6.7μm



6561 6560 6559 6558 6557 6556 6555 6554 6553 6552 6551 6550 6549

13 OCT 76

11.5μm

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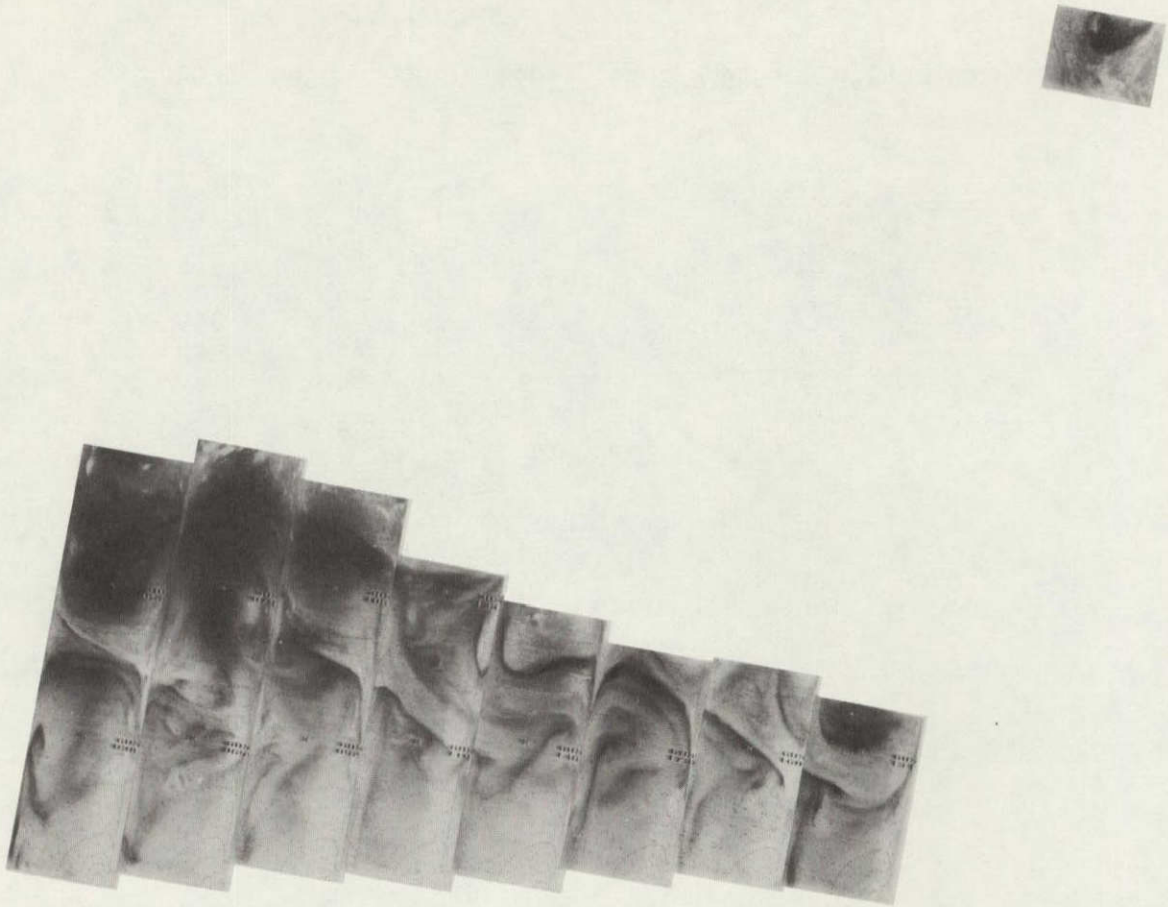

6574 6573 6572 6571 6570 6569 6568 6567 6566 6565 6564 6563 6562

14 OCT 76

6.7μm

6574 6573 6572 6571 6570 6569 6568 6567 6566 6565 6564 6563 6562

14 OCT 76

11.5μm

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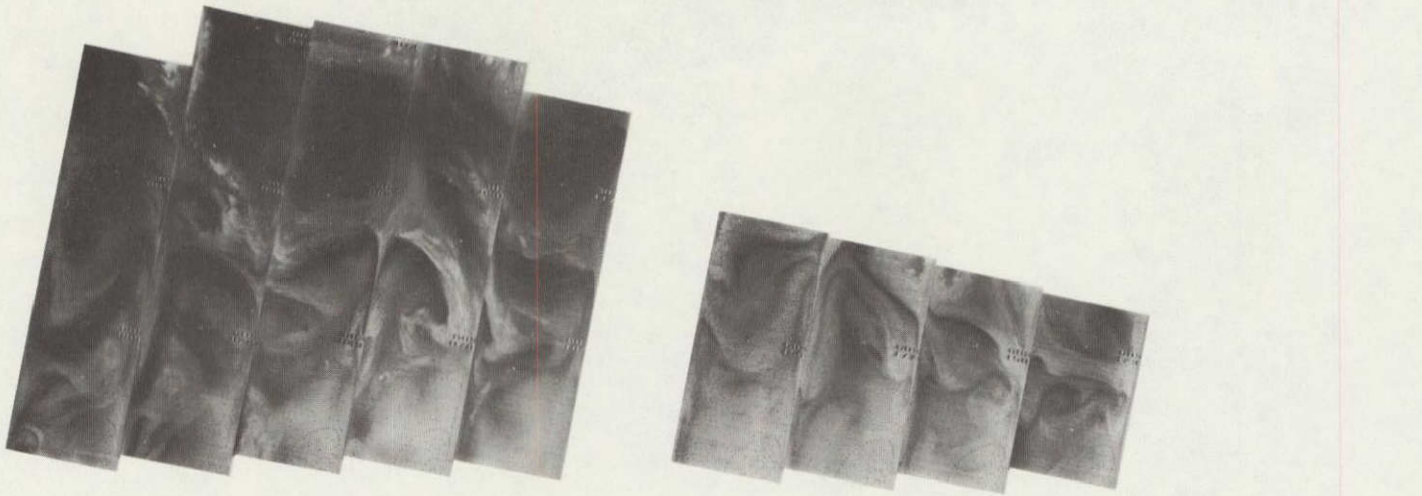

6588 6587 6586 6585 6584 6583 6582 6581 6580 6579 6578 6577 6576 6575

15 OCT 76

6.7μm

6588 6587 6586 6585 6584 6583 6582 6581 6580 6579 6578 6577 6576 6575

15 OCT 76

11.5μm

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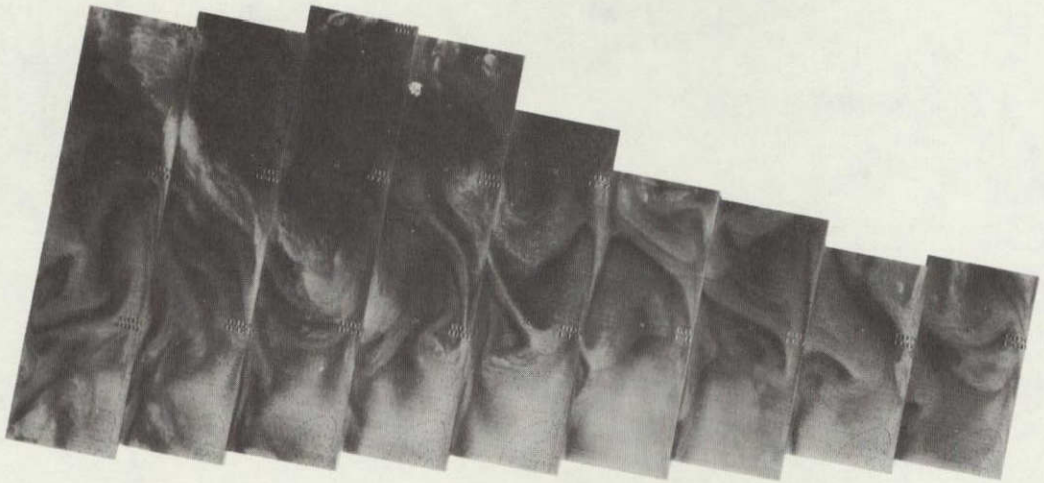

6601 6600 6599 6598 6597 6596 6595 6594 6593 6592 6591 6590 6589

16 OCT 76

6.7μm

6601 6600 6599 6598 6597 6596 6595 6594 6593 6592 6591 6590 6589

16 OCT 76

11.5μm

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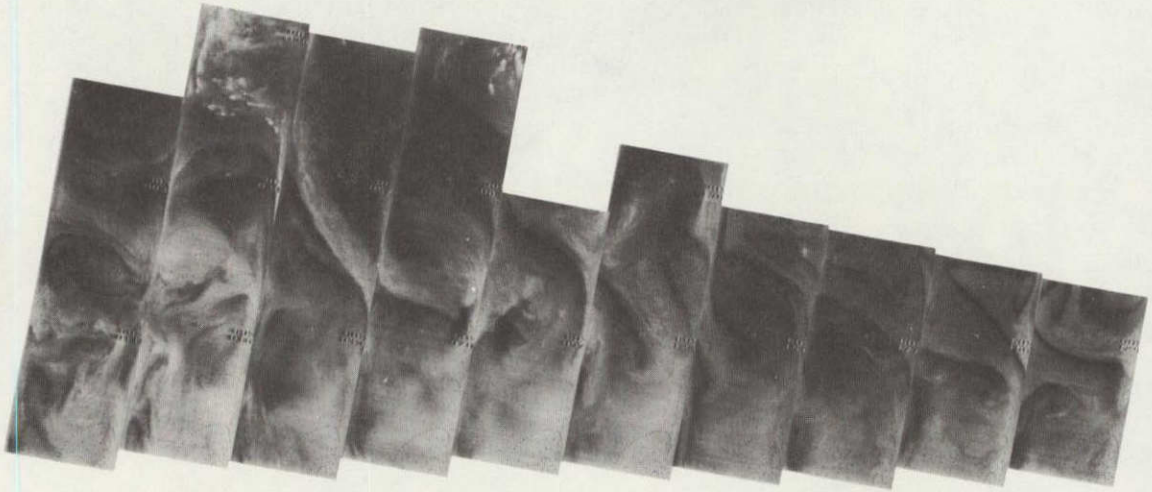

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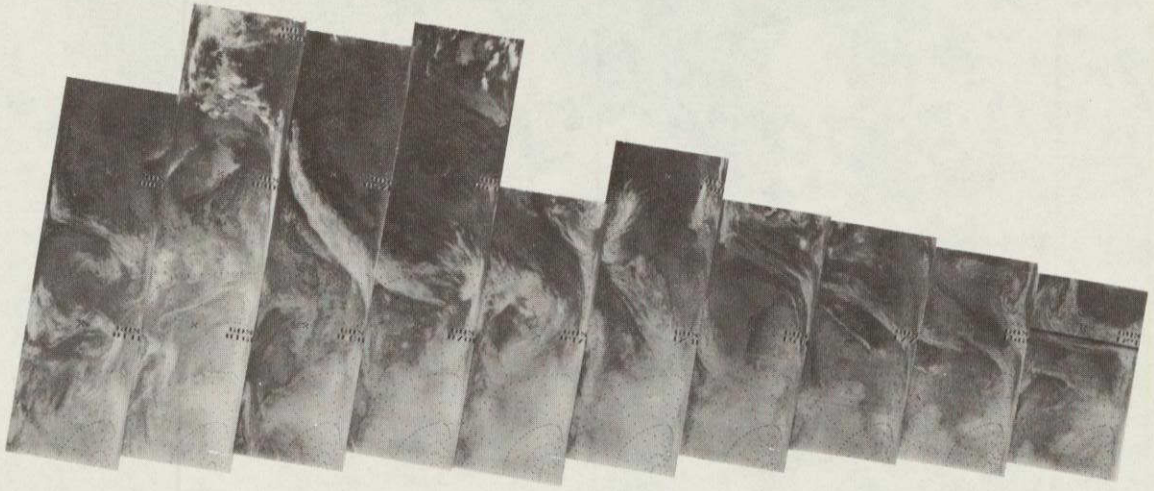
17 OCT 76

6.7μm



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17 OCT 76

11.5μm

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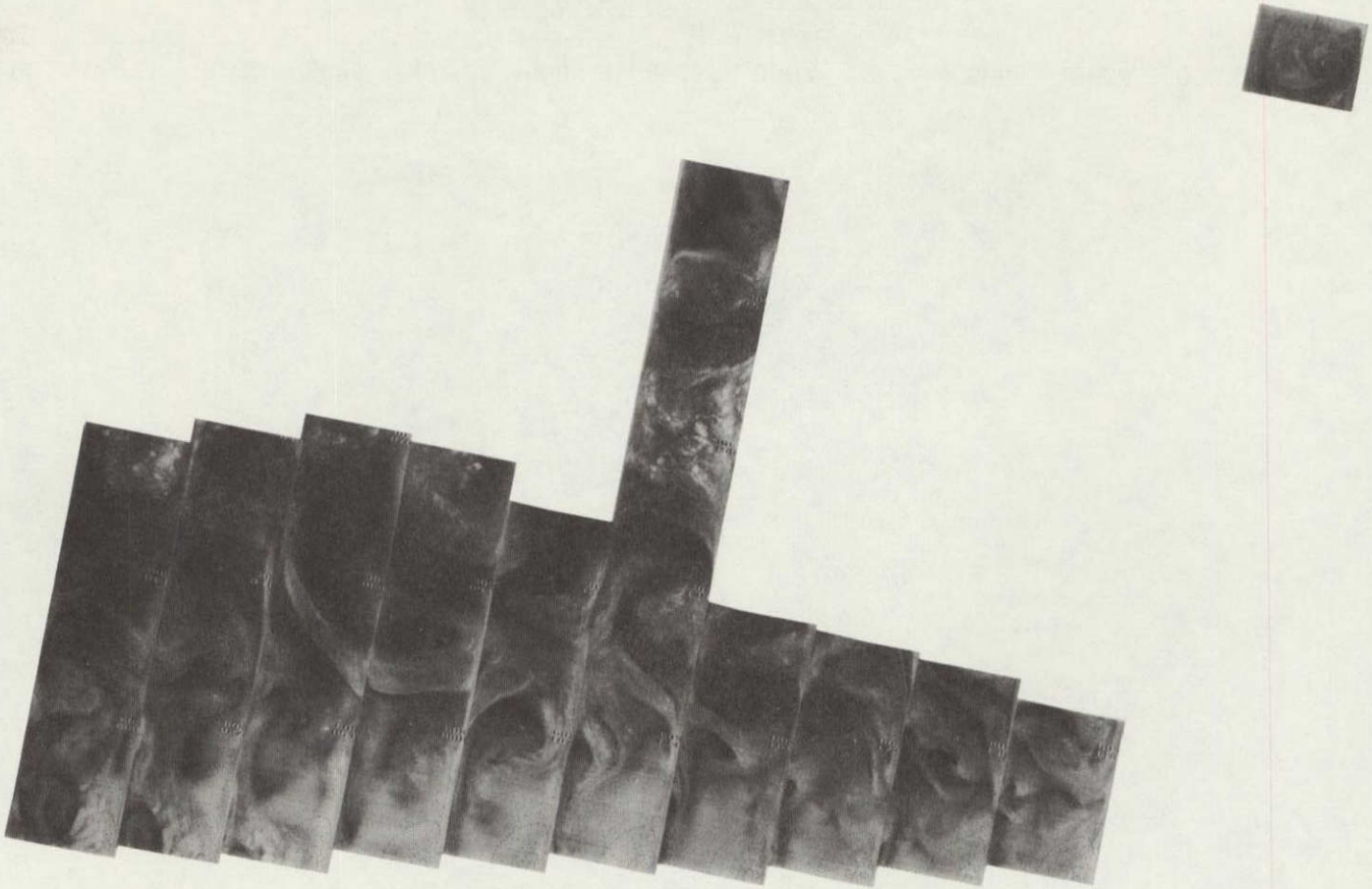

6628 6627 6626 6625 6624 6623 6622 6621 6620 6619 6618 6617 6616

18 OCT 76

6.7μm

6628 6627 6626 6625 6624 6623 6622 6621 6620 6619 6618 6617 6616

18 OCT 76

11.5μm

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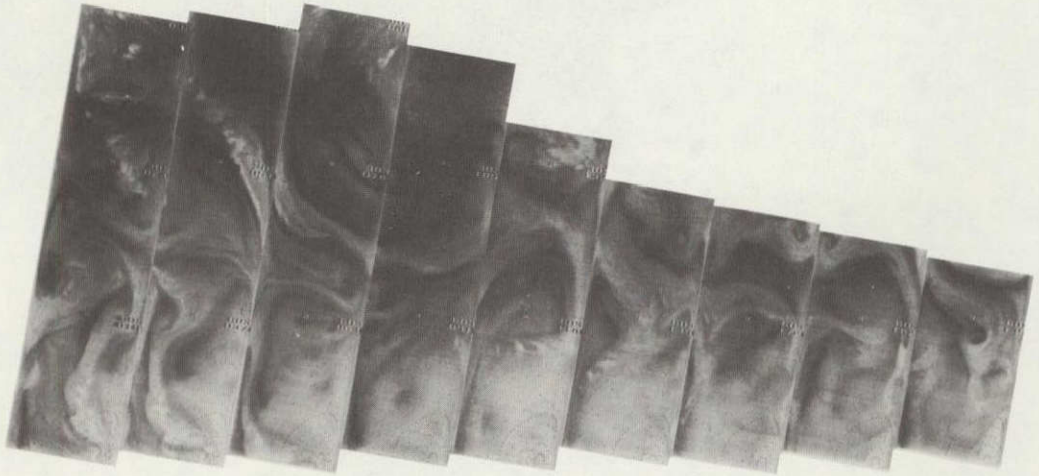

6641 6640 6639 6638 6637 6636 6635 6634 6633 6632 6631 6630 6629

19 OCT 76

6.7μm

6641 6640 6639 6638 6637 6636 6635 6634 6633 6632 6631 6630 6629

19 OCT 76

11.5μm

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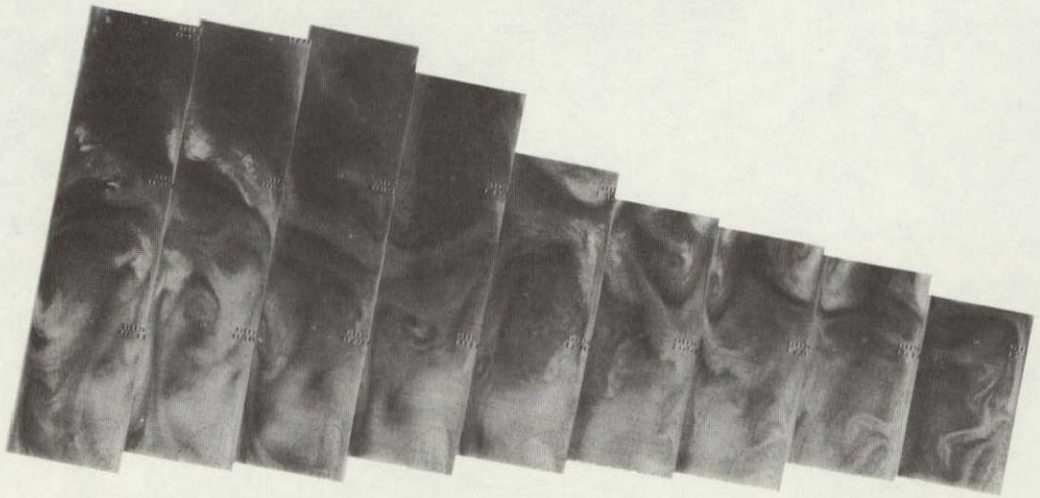

6655 6654 6653 6652 6651 6650 6649 6648 6647 6646 6645 6644 6643 6642

20 OCT 76

6.7μm

6655 6654 6653 6652 6651 6650 6649 6648 6647 6646 6645 6644 6643 6642

20 OCT 76

11.5μm

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6668 6667 6666 6665 6664 6663 6662 6661 6660 6659 6658 6657 6656

21 OCT 76

6.7μm

6668 6667 6666 6665 6664 6663 6662 6661 6660 6659 6658 6657 6656

21 OCT 76

11.5μm

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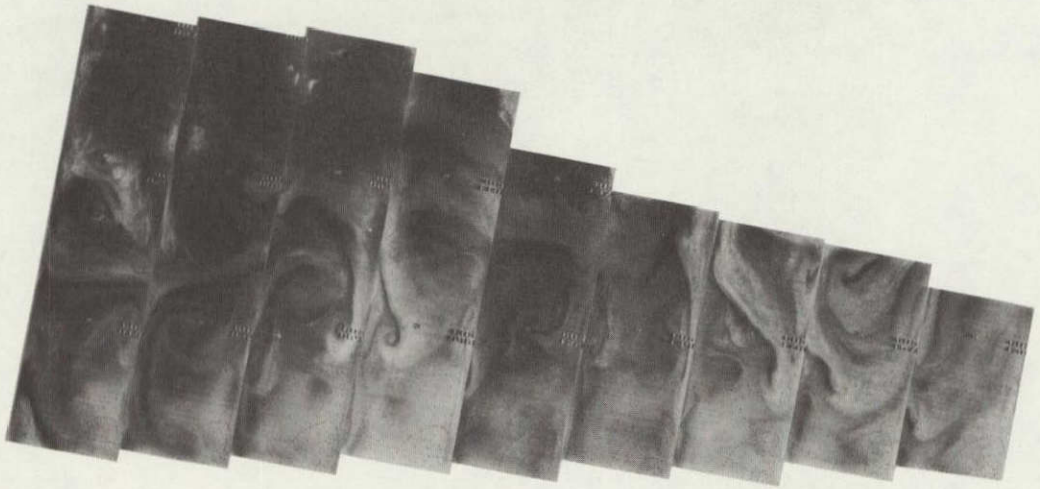

6682 6681 6680 6679 6678 6677 6676 6675 6674 6673 6672 6671 6670 6669

22 OCT 76

6.7μm

6682 6681 6680 6679 6678 6677 6676 6675 6674 6673 6672 6671 6670 6669

22 OCT 76

11.5μm

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6695 6694 6693 6692 6691 6690 6689 6688 6687 6686 6685 6684 6683

23 OCT 76

6.7μm

6695 6694 6693 6692 6691 6690 6689 6688 6687 6686 6685 6684 6683

23 OCT 76

11.5μm

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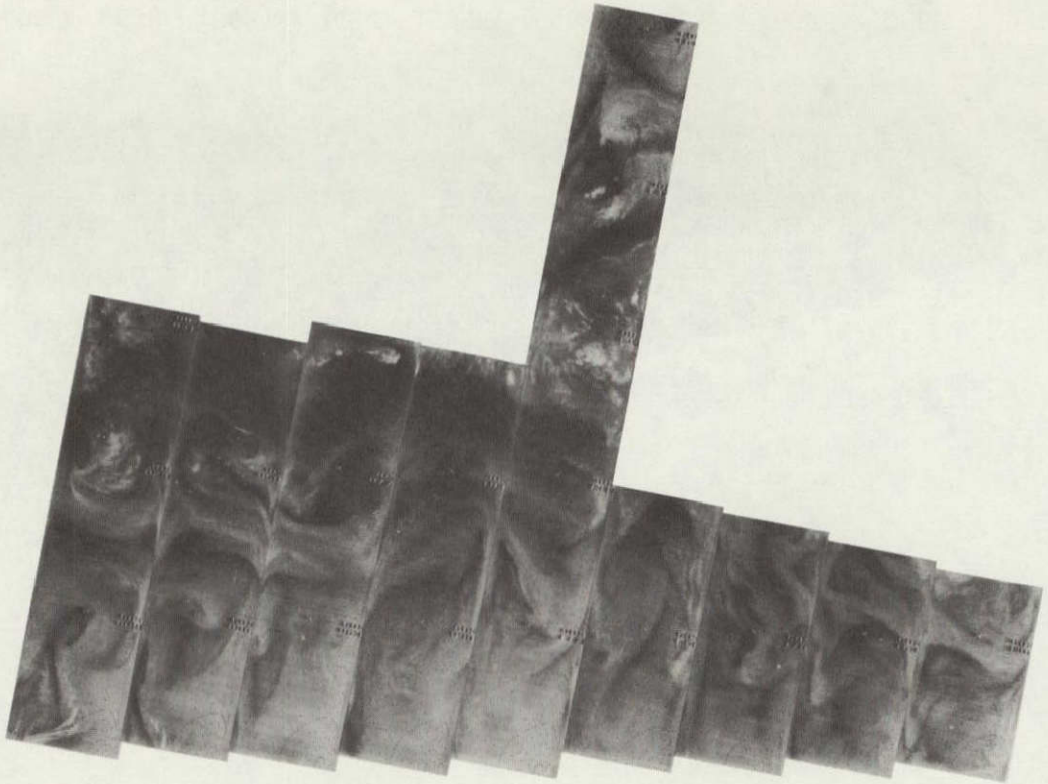
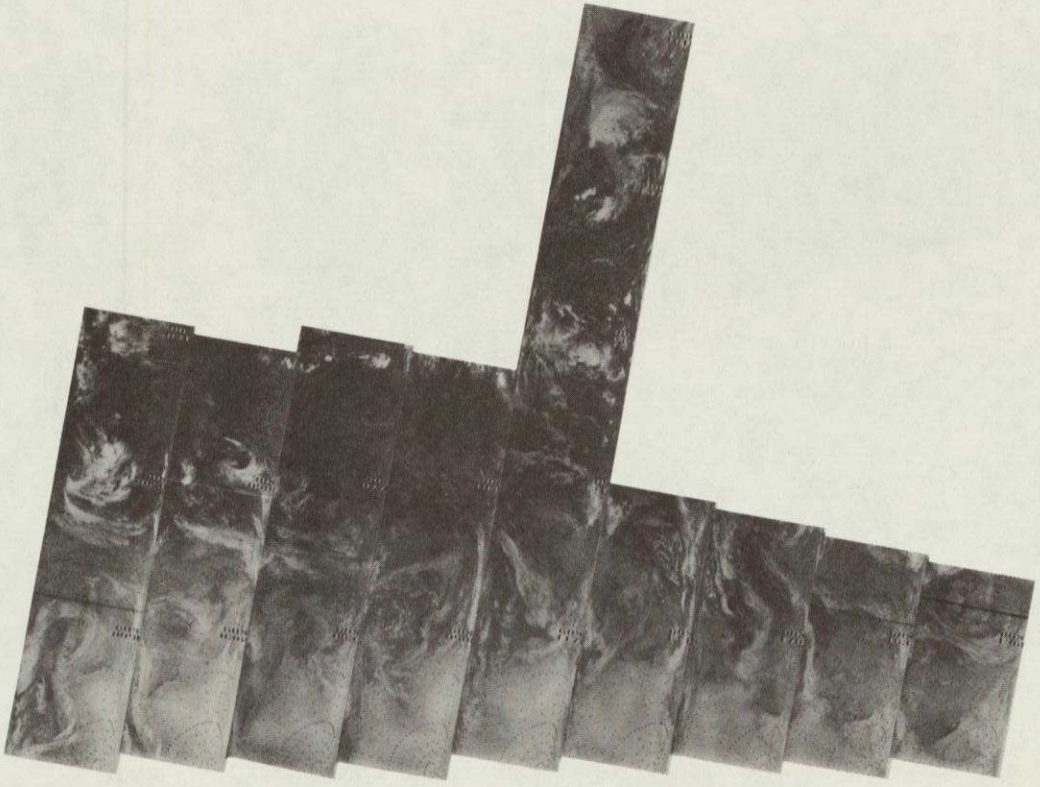


6708 6707 6706 6705 6704 6703 6702 6701 6700 6699 6698 6697 6696

24 OCT 76

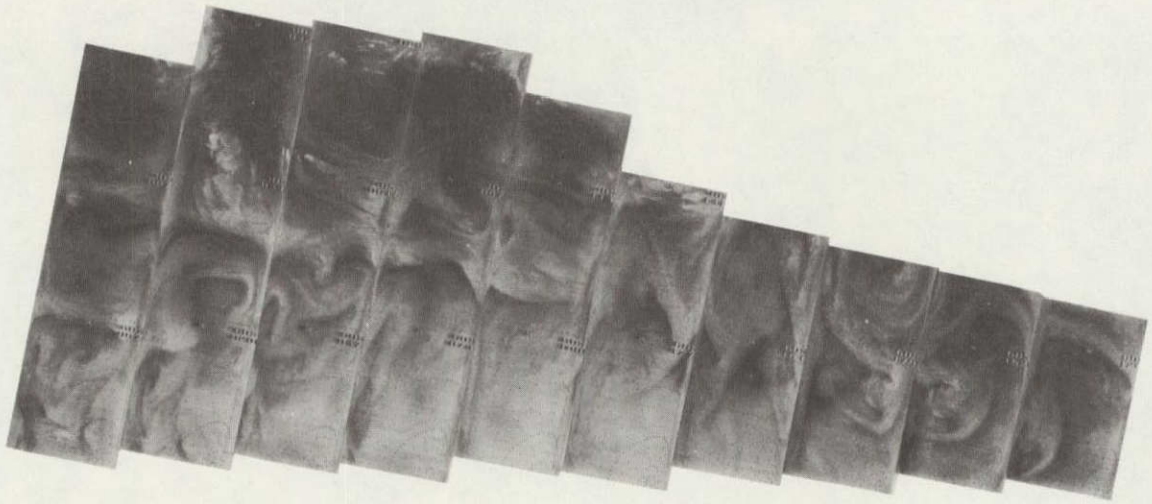
6.7μm



6708 6707 6706 6705 6704 6703 6702 6701 6700 6699 6698 6697 6696

24 OCT 76

11.5μm



6722 6721 6720 6719 6718 6717 6716 6715 6714 6713 6712 6711 6710 6709

25 OCT 76

6.7μm

6722 6721 6720 6719 6718 6717 6716 6715 6714 6713 6712 6711 6710 6709

25 OCT 76

11.5μm

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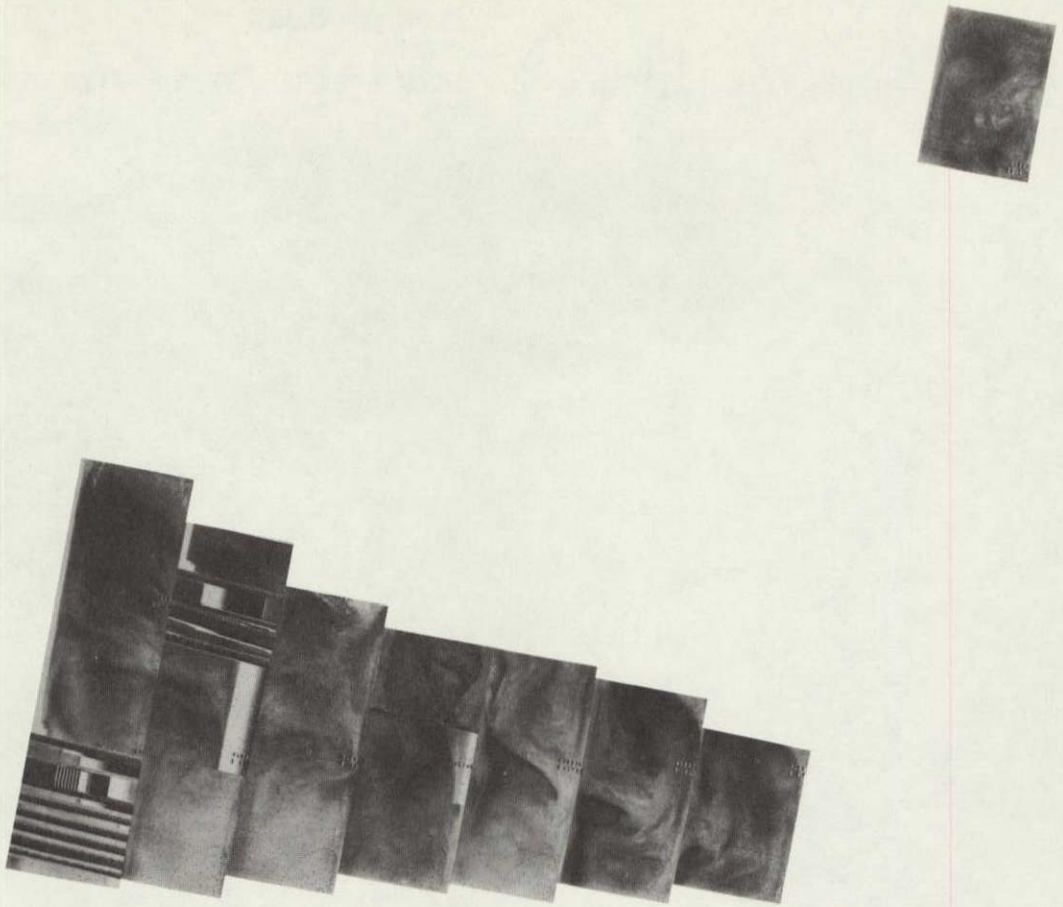

6735 6734 6733 6732 6731 6730 6729 6728 6727 6726 6725 6724 6723

26 OCT 76

6.7μm

6735 6734 6733 6732 6731 6730 6729 6728 6727 6726 6725 6724 6723

26 OCT 76

11.5μm

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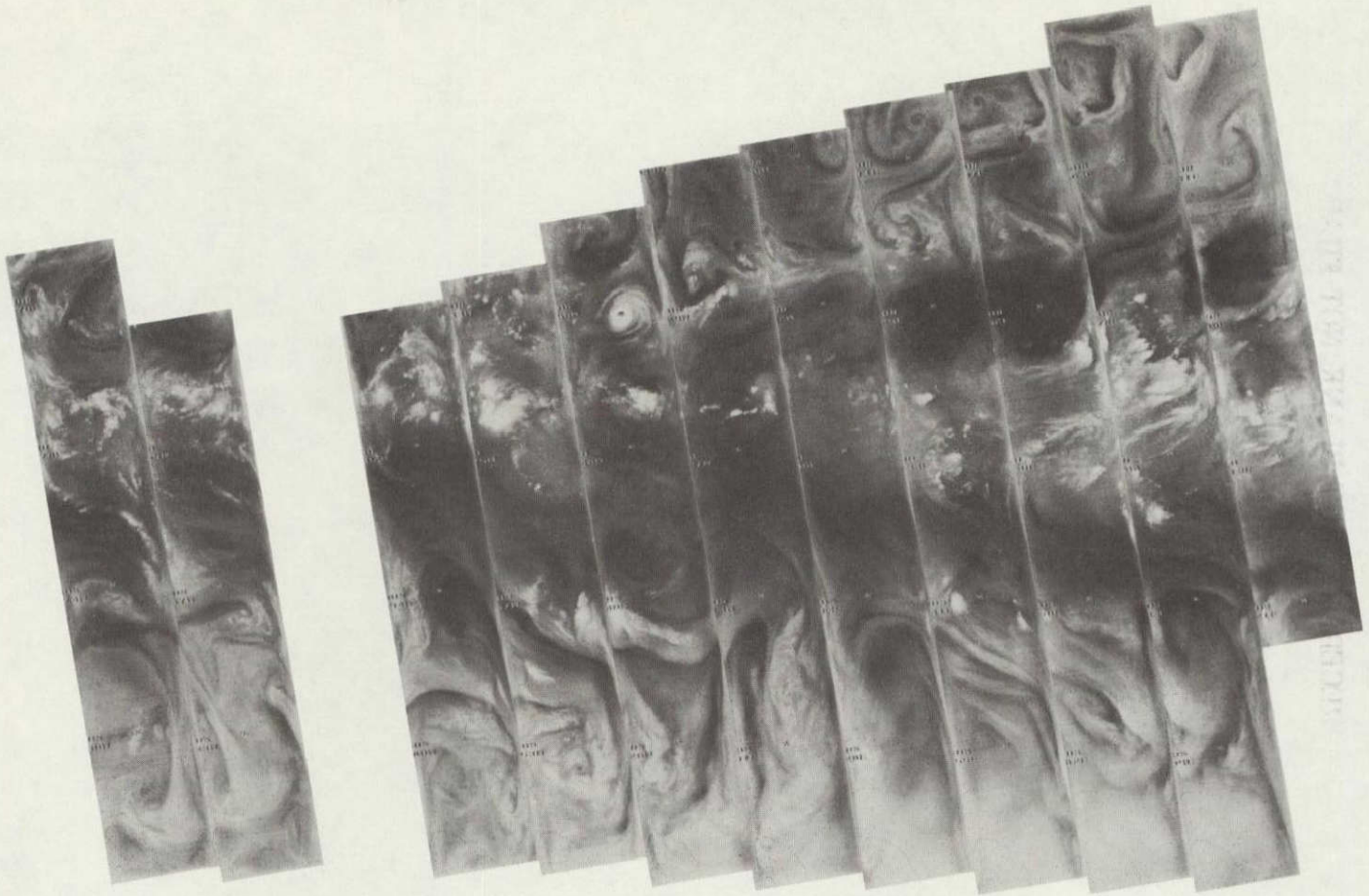
SECTION 4.2

TEMPERATURE HUMIDITY INFRARED RADIOMETER

DAYTIME MONTAGES



5999 5998 5997 5996 5995 5994 5993 5992 5991 5990 5989 5988 5987 5986

1 SEP 76

6.7μm

5999 5998 5997 5996 5995 5994 5993 5992 5991 5990 5989 5988 5987 5986

1 SEP 76

11.5μm

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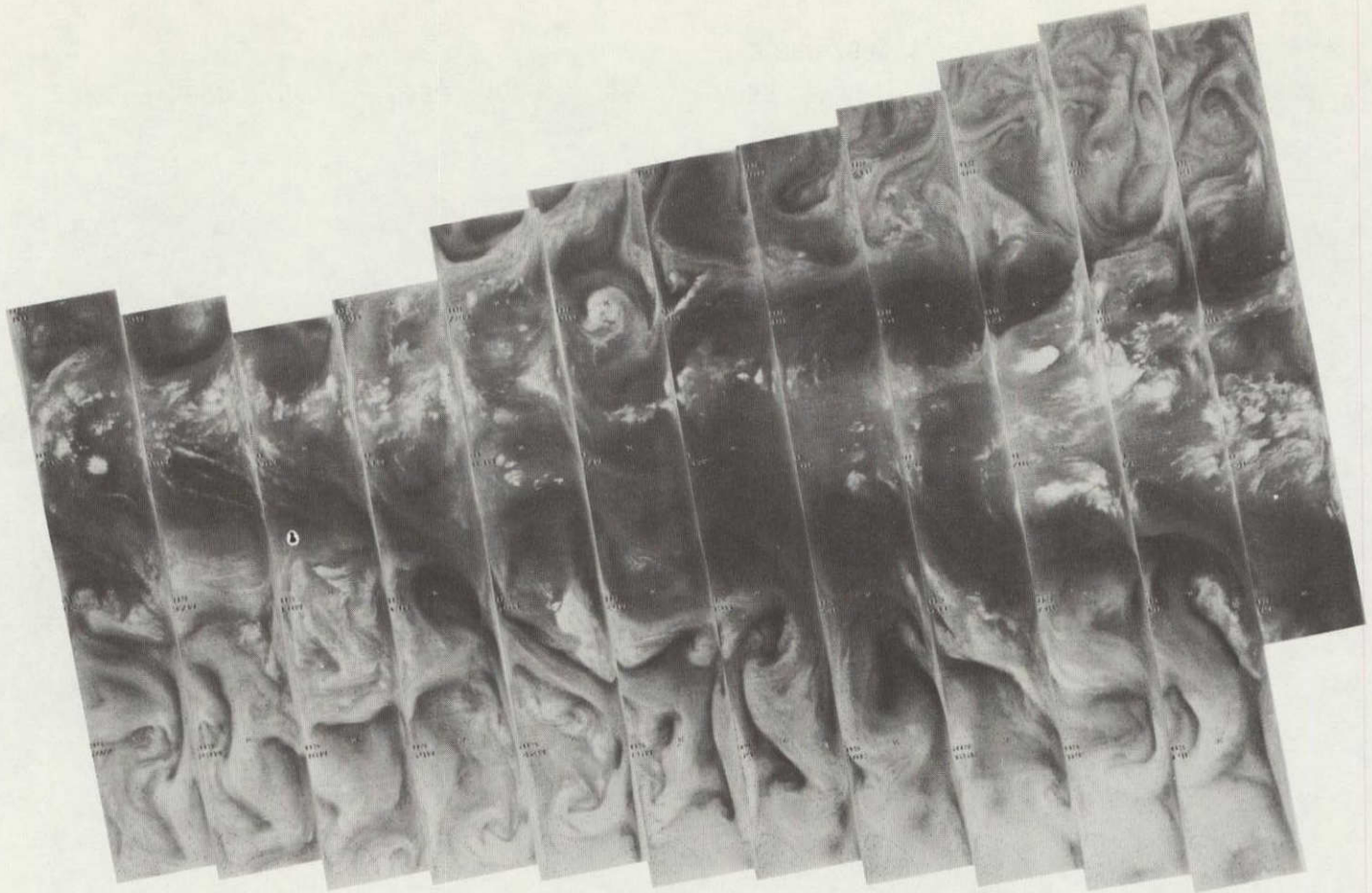
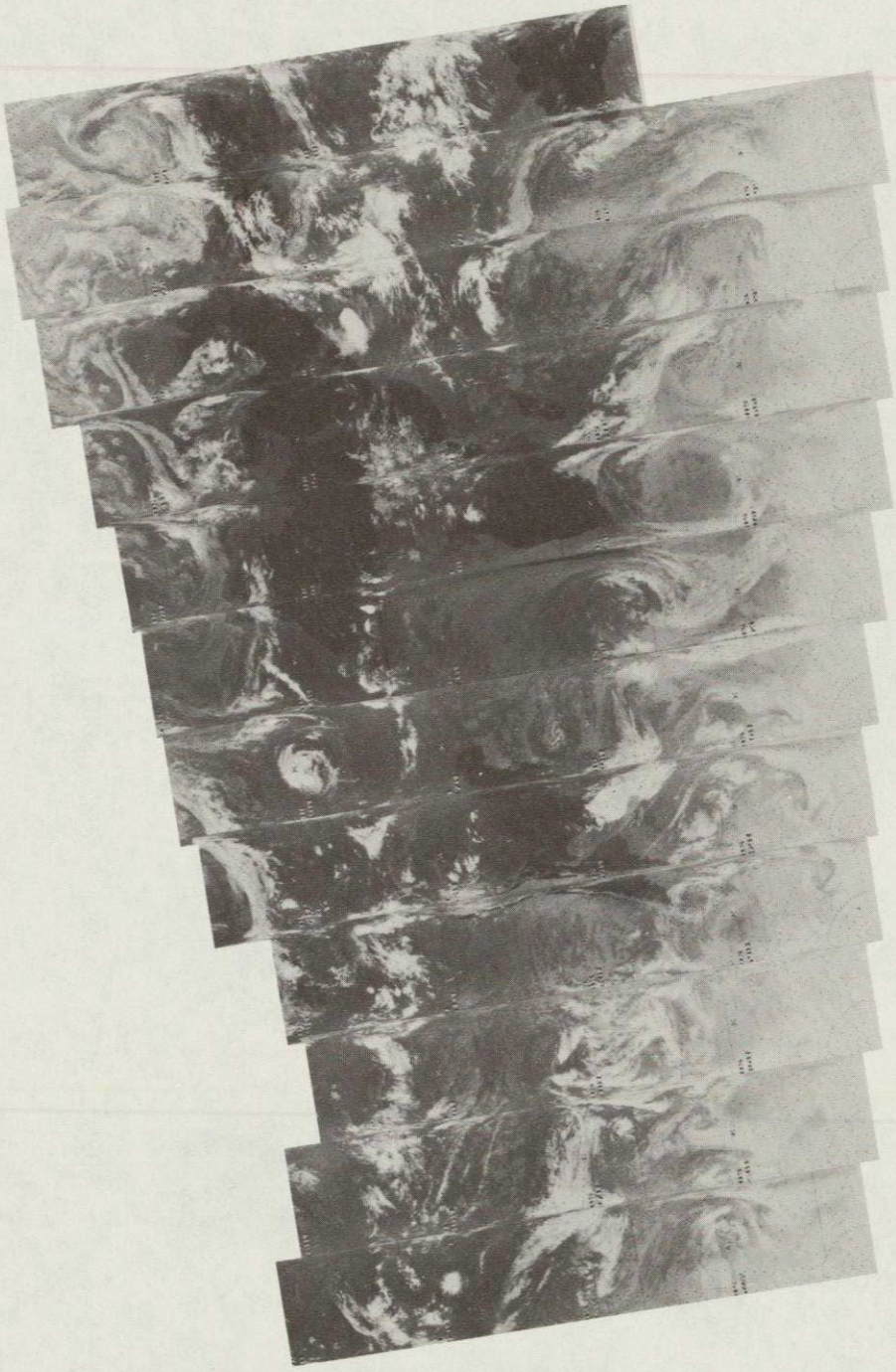


6012 6011 6010 6009 6008 6007 6006 6005 6004 6003 6002 6001 6000

2 SEP 76

6.7μm



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6025 6024 6023 6022 6021 6020 6019 6018 6017 6016 6015 6014 6013

3 SEP 76

6.7μm

6025 6024 6023 6022 6021 6020 6019 6018 6017 6016 6015 6014 6013

3 SEP 76

11.5μm

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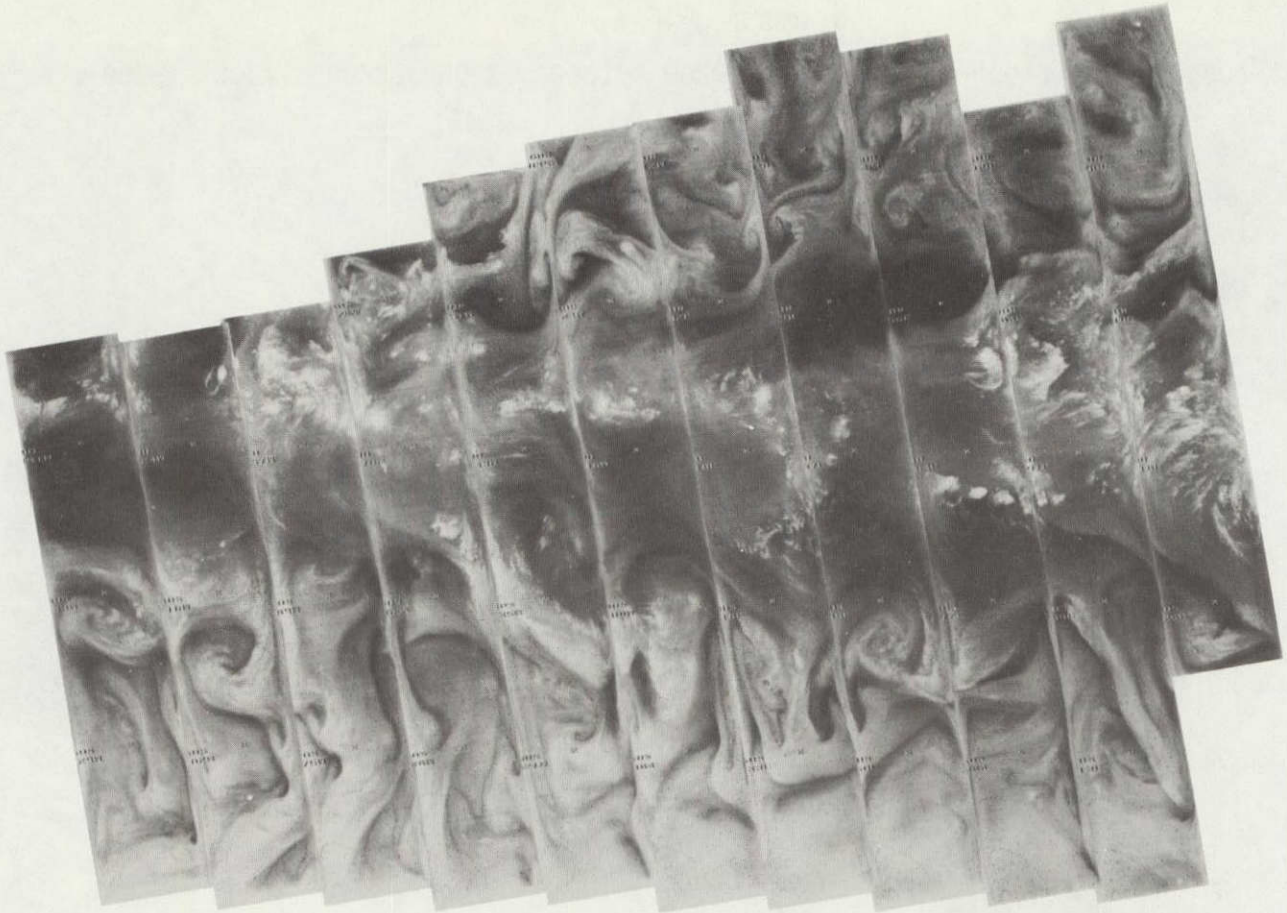

6039 6038 6037 6036 6035 6034 6033 6032 6031 6030 6029 6028 6027 6026

4 SEP 76

6.7μm

6039 6038 6037 6036 6035 6034 6033 6032 6031 6030 6029 6028 6027 6026

4 SEP 76

11.5μm

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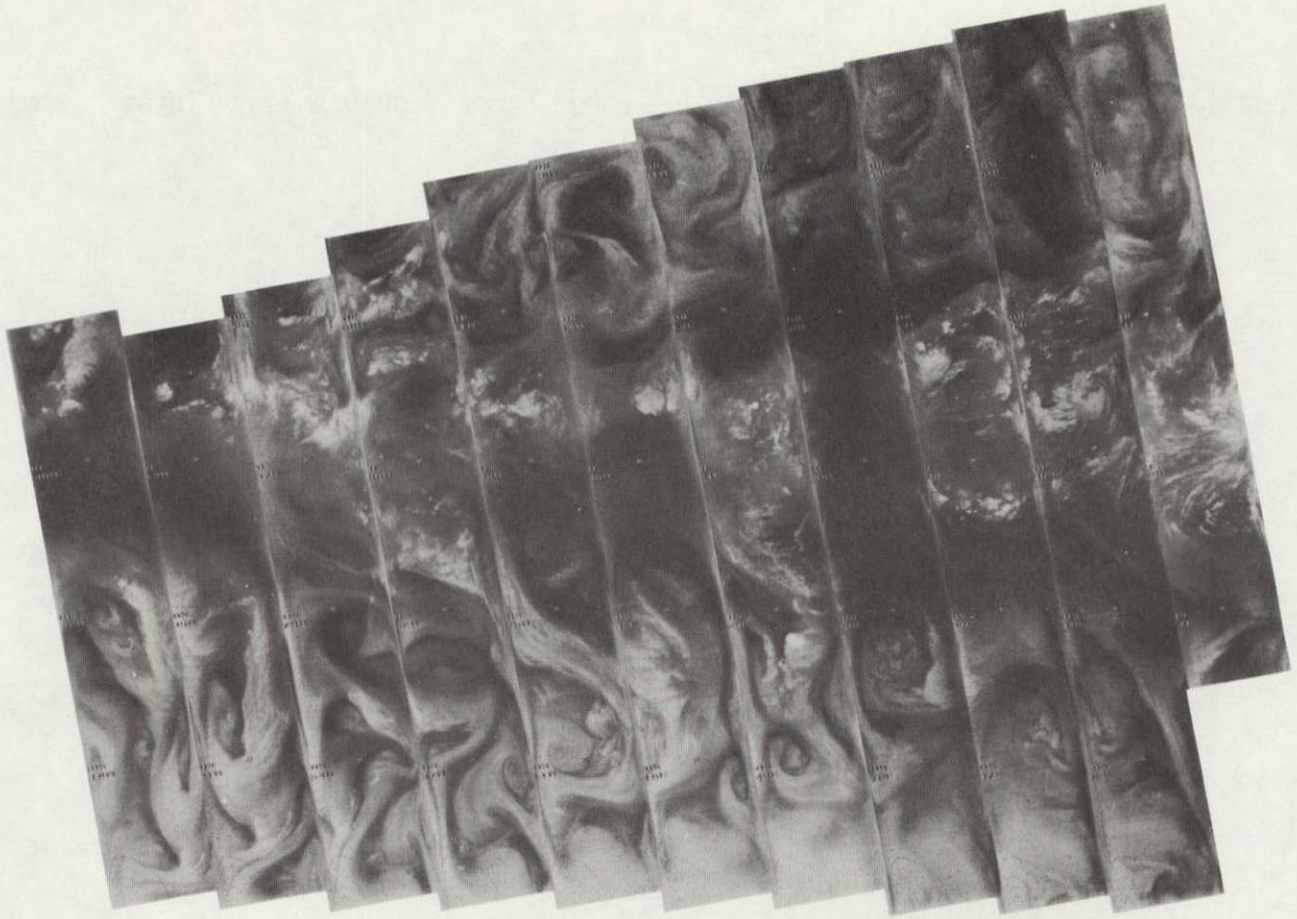

6052 6051 6050 6049 6048 6047 6046 6045 6044 6043 6042 6041 6040

5 SEP 76

6.7μm

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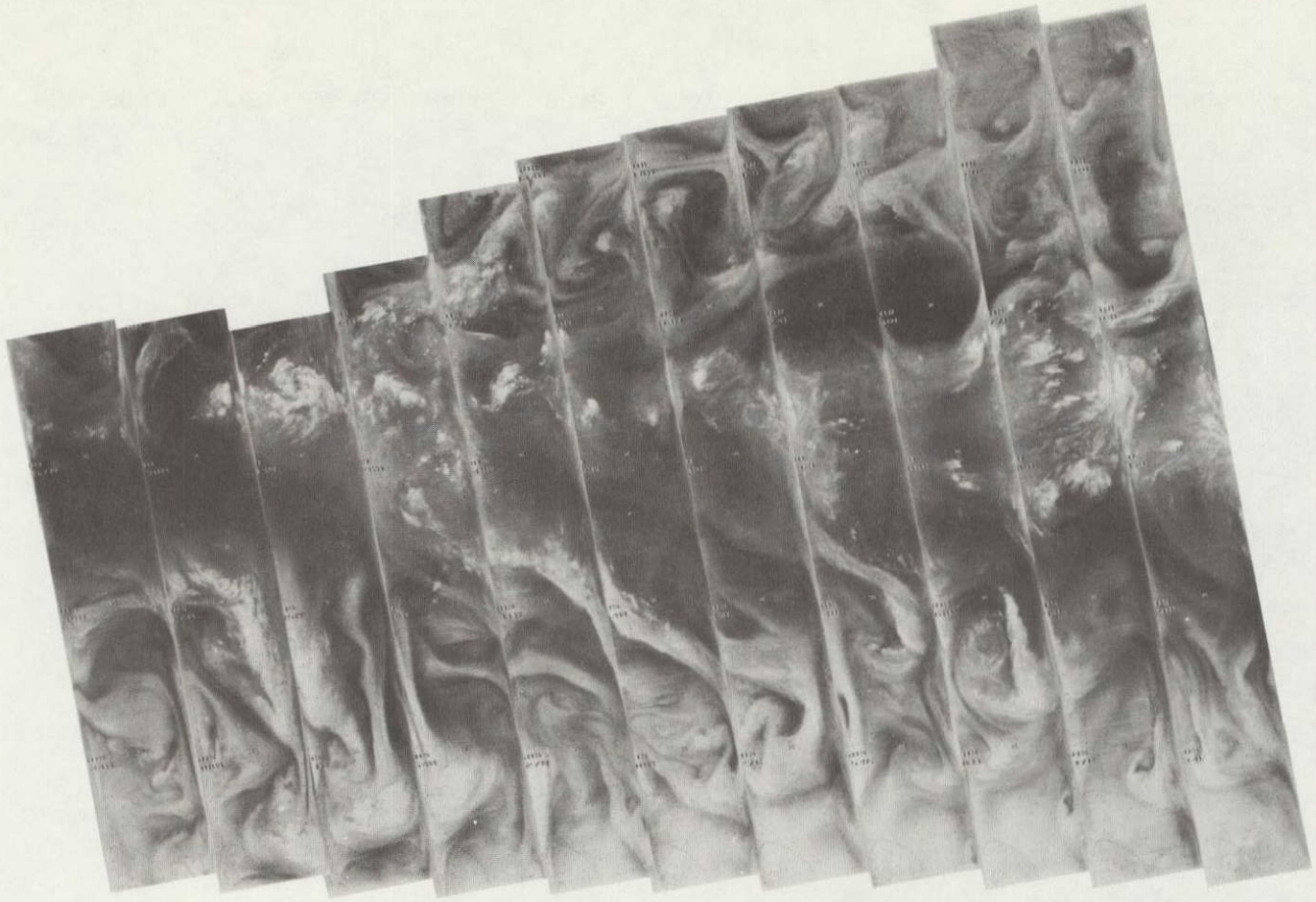

6066 6065 6064 6063 6062 6061 6060 6059 6058 6057 6056 6055 6054 6053

6 SEP 76

6.7μm

Q-3

6066 6065 6064 6063 6062 6061 6060 6059 6058 6057 6056 6055 6054 6053

6 SEP 76

11.5μm

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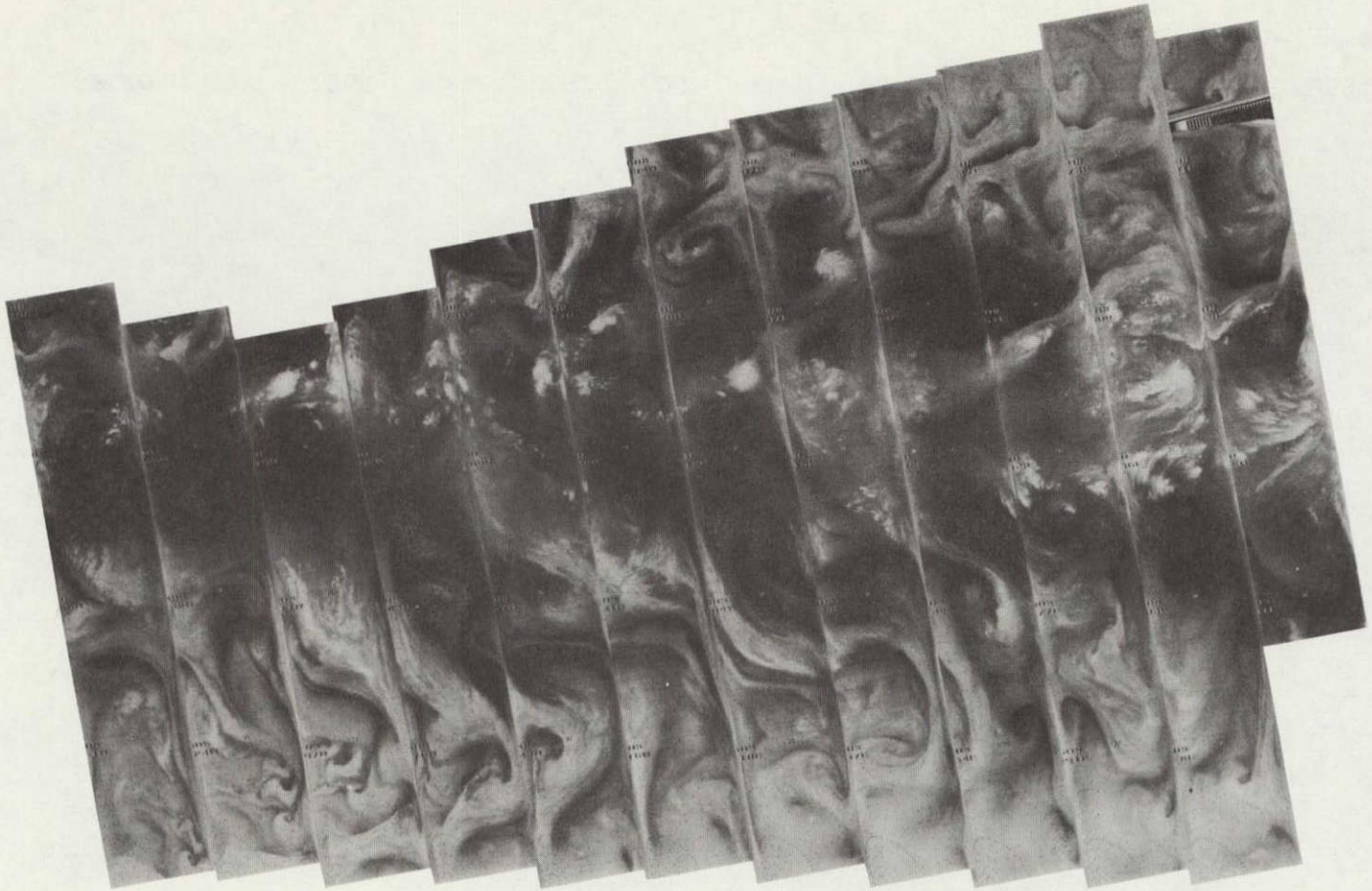

6079 6078 6077 6076 6075 6074 6073 6072 6071 6070 6069 6068 6067

7 SEP 76

6.7μm

6079 6078 6077 6076 6075 6074 6073 6072 6071 6070 6069 6068 6067

7 SEP 76

11.5μm

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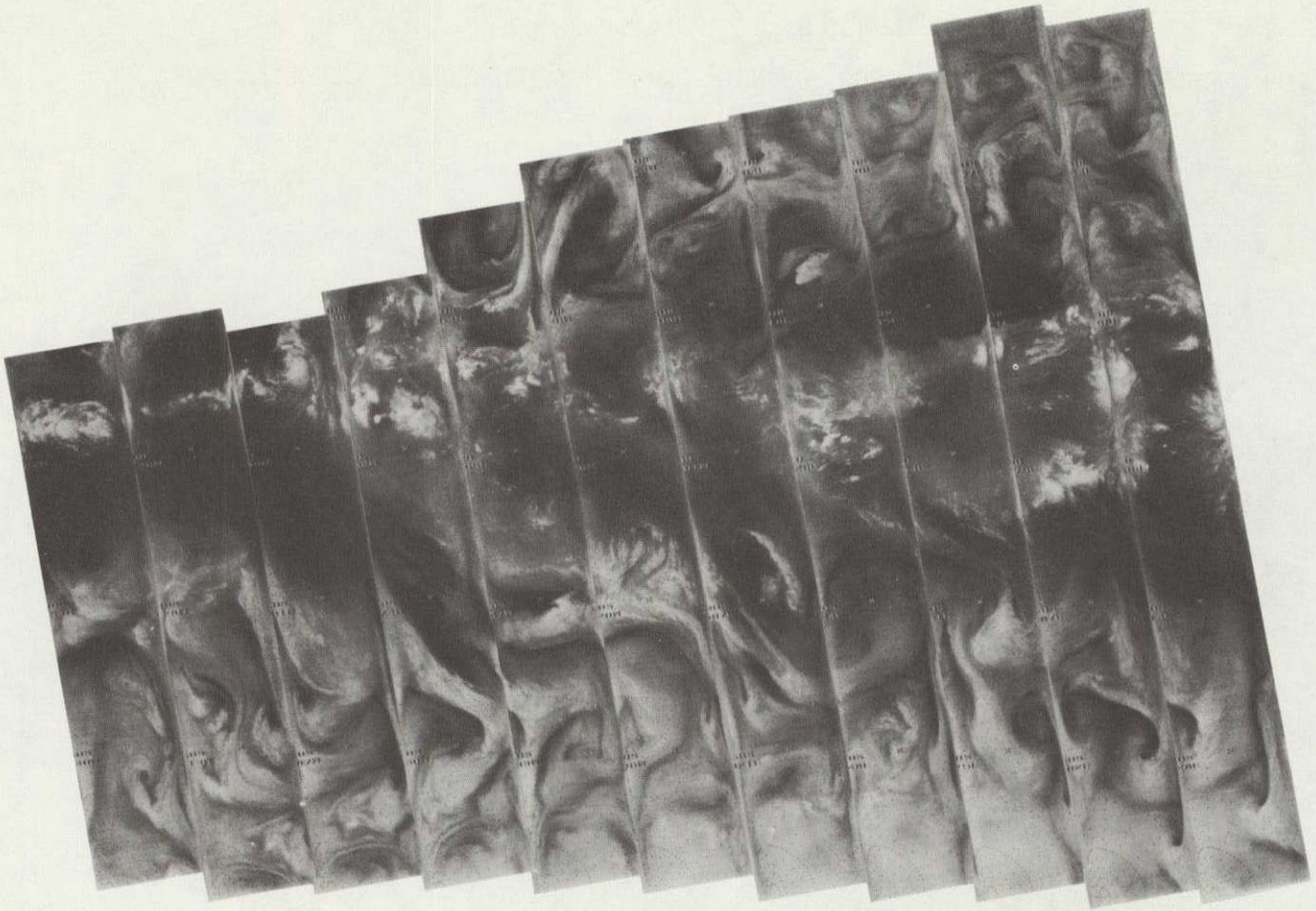

6092 6091 6090 6089 6088 6087 6086 6085 6084 6083 6082 6081 6080

8 SEP 76

6.7μm

6092 6091 6090 6089 6088 6087 6086 6085 6084 6083 6082 6081 6080

8 SEP 76

11.5μm

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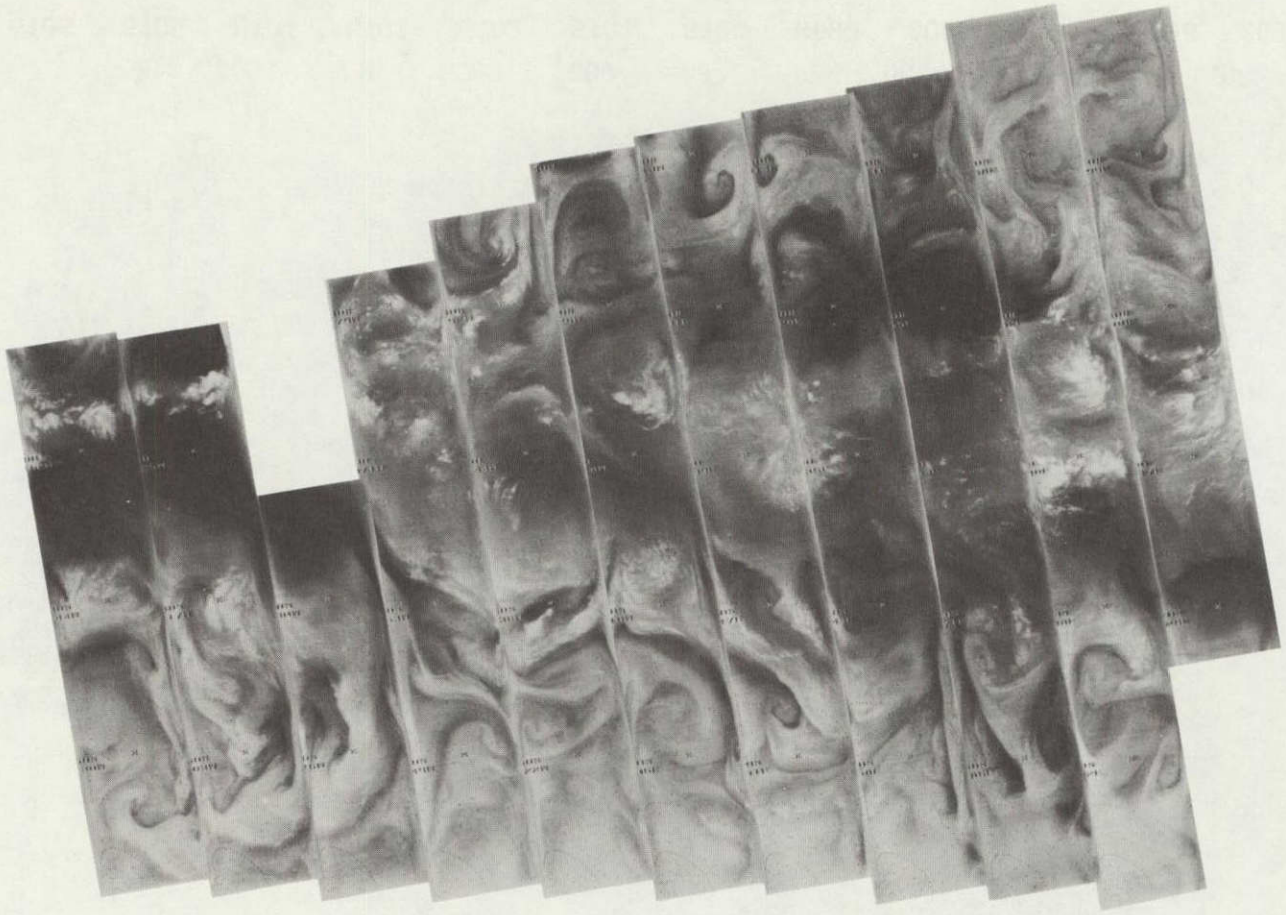

6106 6105 6104 6103 6102 6101 6100 6099 6098 6097 6096 6095 6094 6093

9 SEP 76

6.7μm

6106 6105 6104 6103 6102 6101 6100 6099 6098 6097 6096 6095 6094 6093

9 SEP 76

11.5μm

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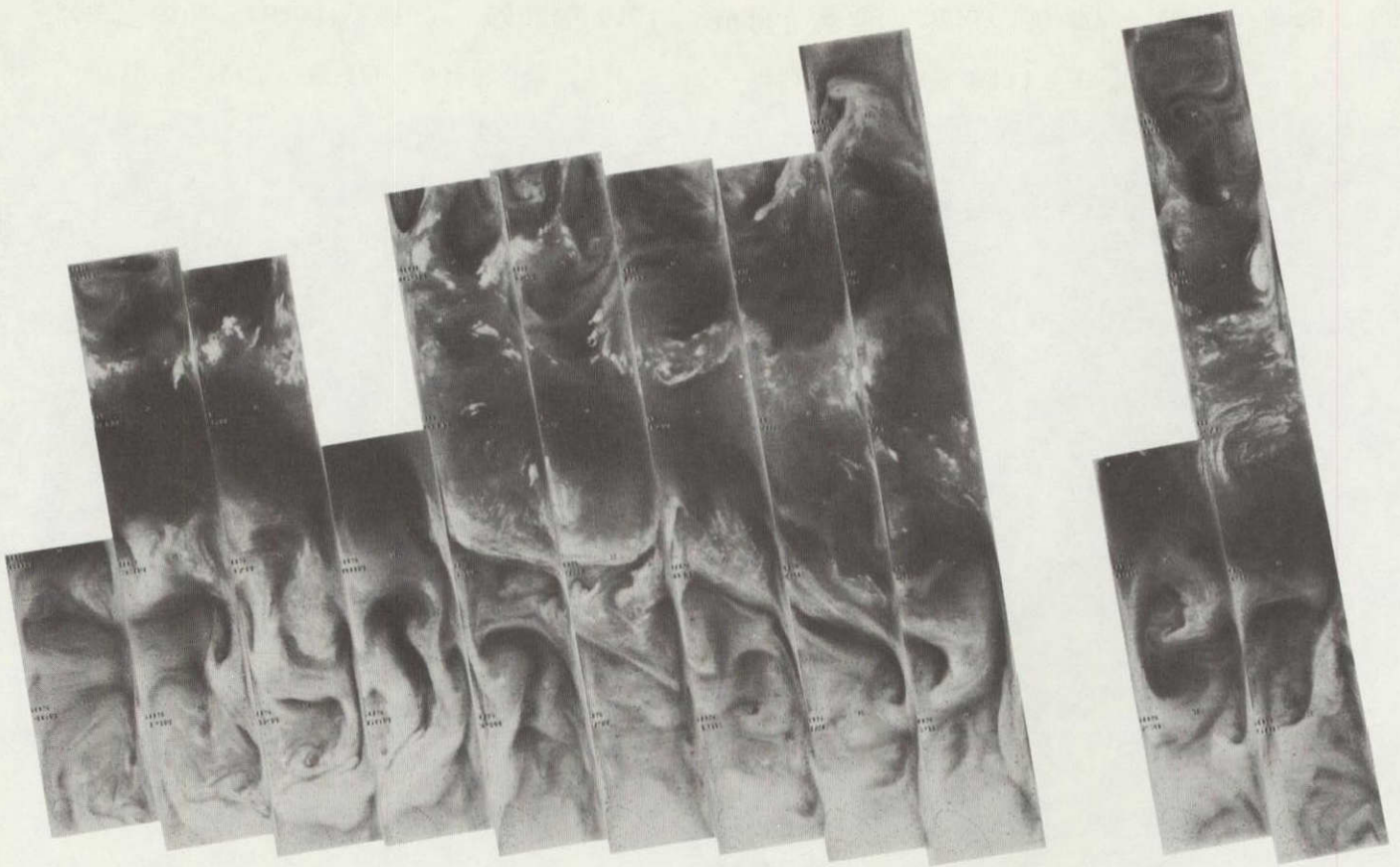

6119 6118 6117 6116 6115 6114 6113 6112 6111 6110 6109 6108 6107

10 SEP 76

6.7μm

6119 6118 6117 6116 6115 6114 6113 6112 6111 6110 6109 6108 6107

10 SEP 76

11.5μm

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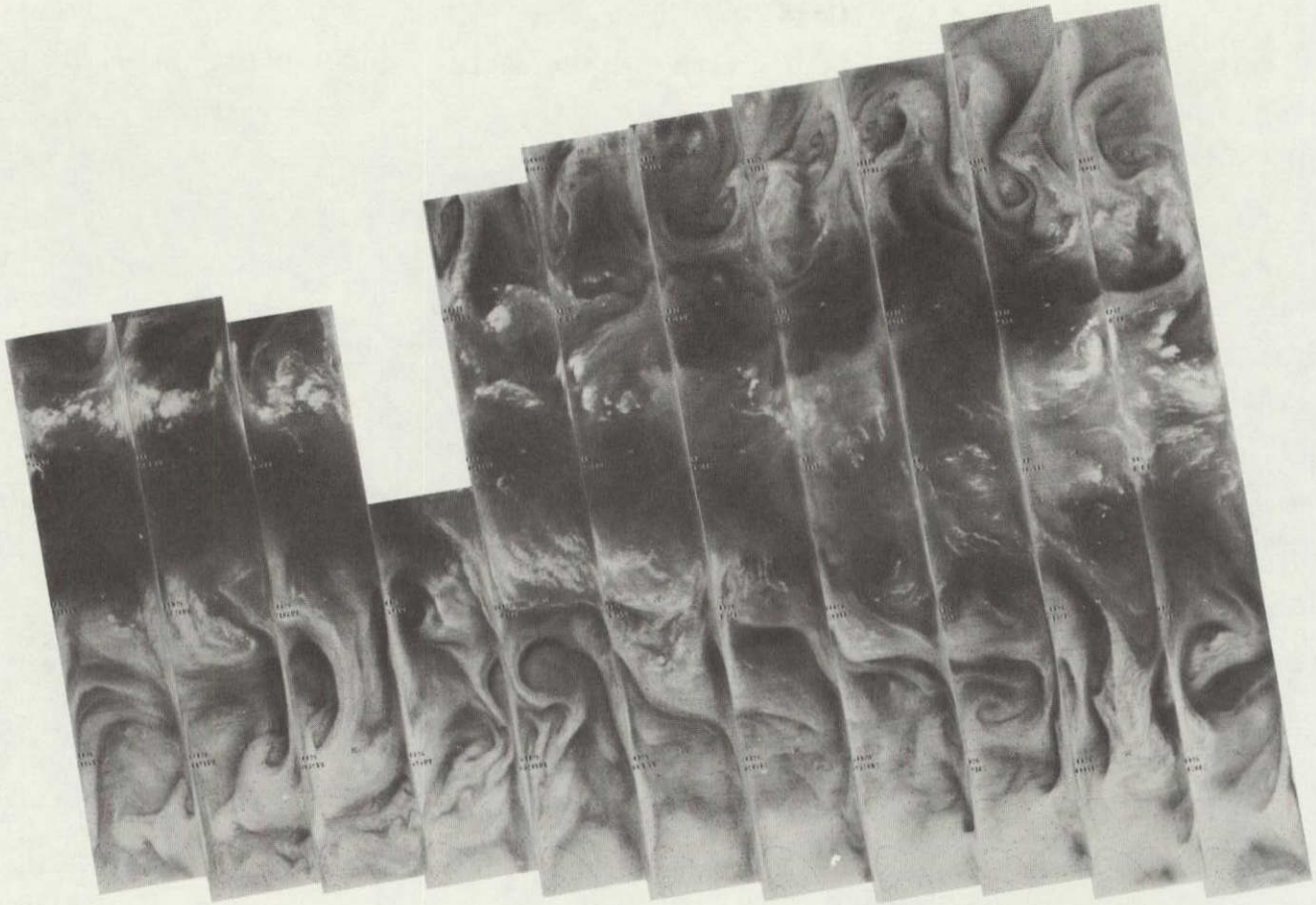

6133 6132 6131 6130 6129 6128 6127 6126 6125 6124 6123 6122 6121 6120

11 SEP 76

6.7μm

6133 6132 6131 6130 6129 6128 6127 6126 6125 6124 6123 6122 6121 6120

11 SEP 76

11.5μm

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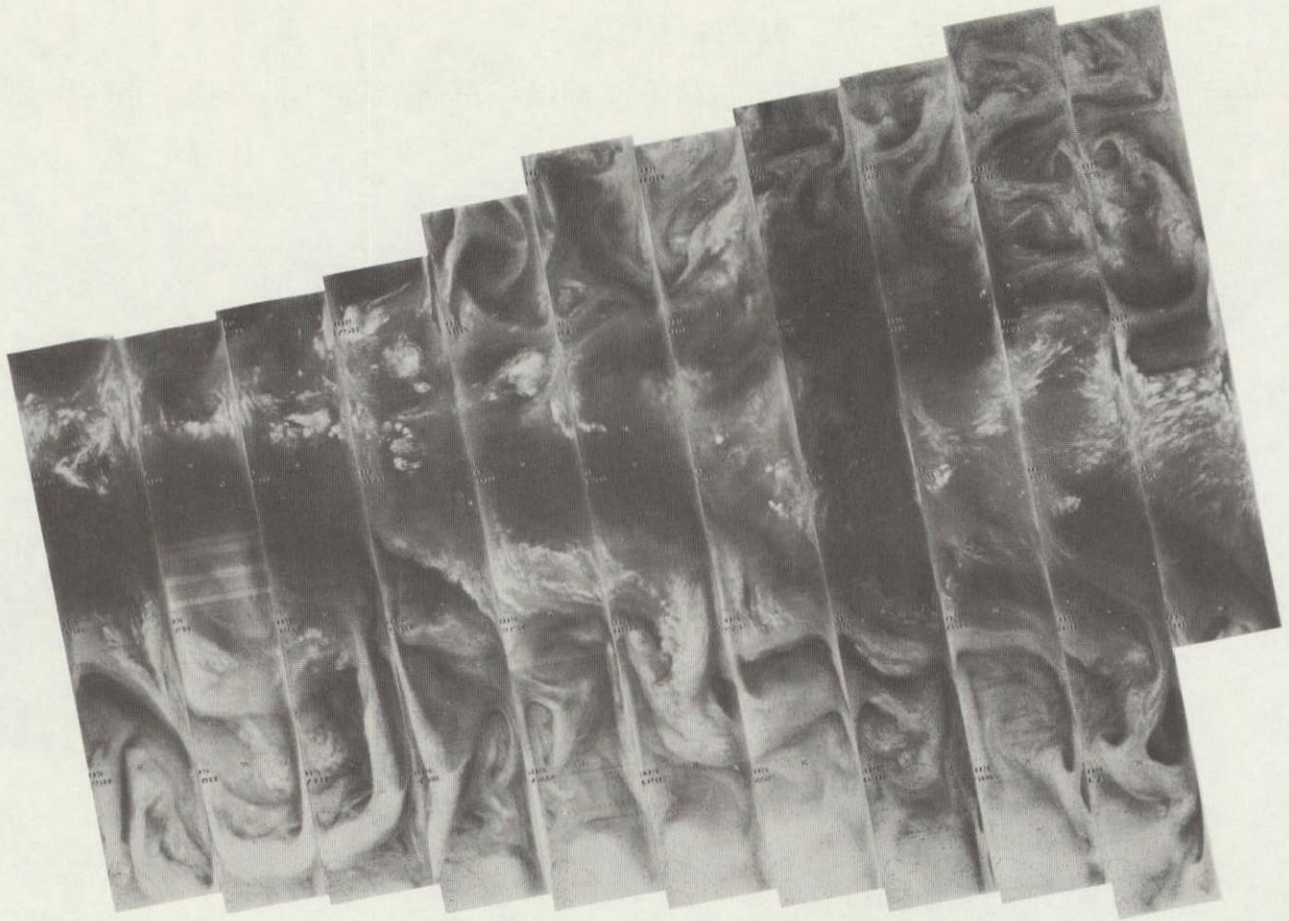

6146 6145 6144 6143 6142 6141 6140 6139 6138 6137 6136 6135 6134

12 SEP 76

6.7μm

6146 6145 6144 6143 6142 6141 6140 6139 6138 6137 6136 6135 6134

12 SEP 76

11.5μm

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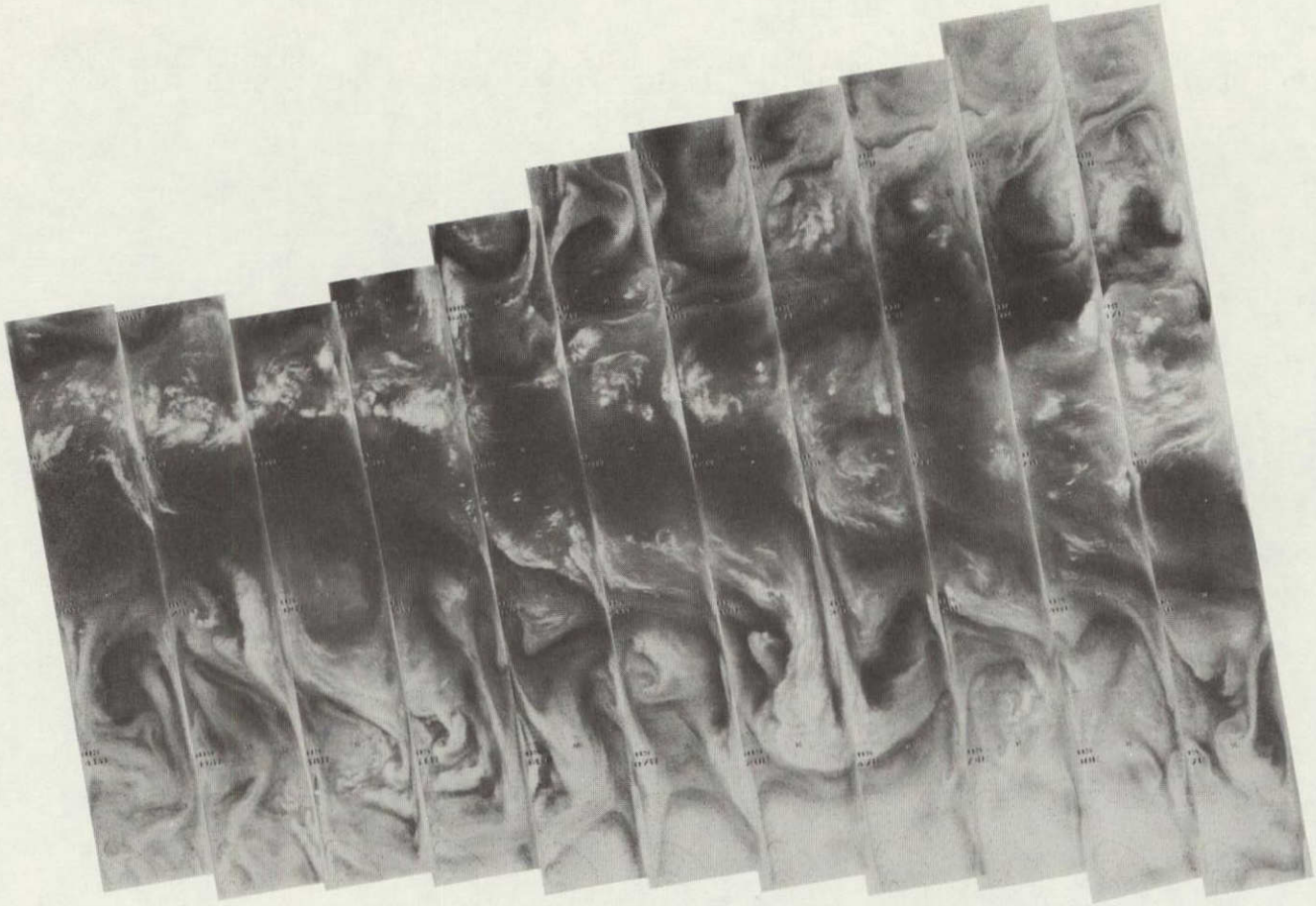

6159 6158 6157 6156 6155 6154 6153 6152 6151 6150 6149 6148 6147

13 SEP 76

6.7μm

6159 6158 6157 6156 6155 6154 6153 6152 6151 6150 6149 6148 6147

13 SEP 76

11.5μm

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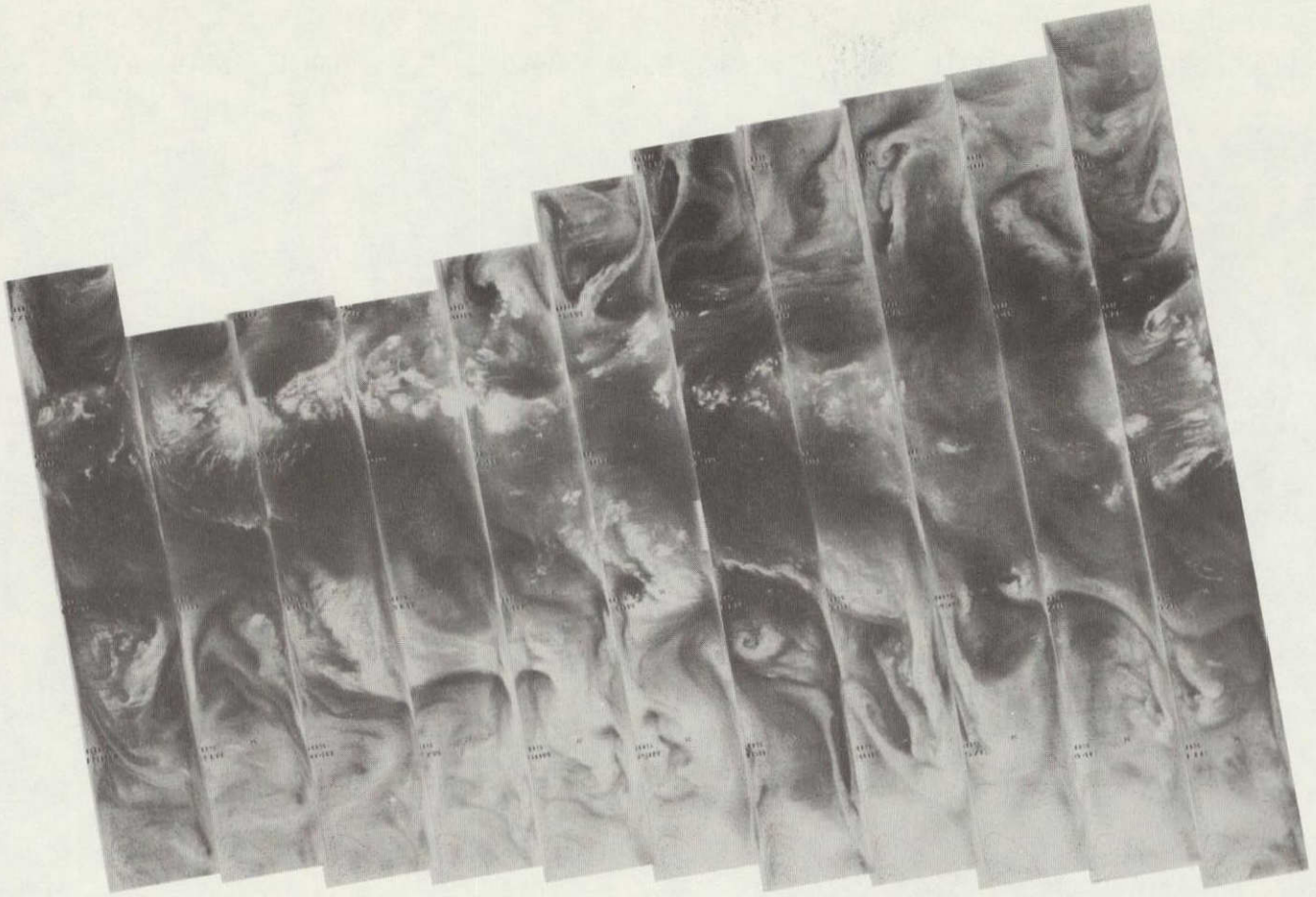

6173 6172 6171 6170 6169 6168 6167 6166 6165 6164 6163 6162 6161 6160

14 SEP 76

6.7μm

6173 6172 6171 6170 6169 6168 6167 6166 6165 6164 6163 6162 6161 6160

14 SEP 76

11.5μm

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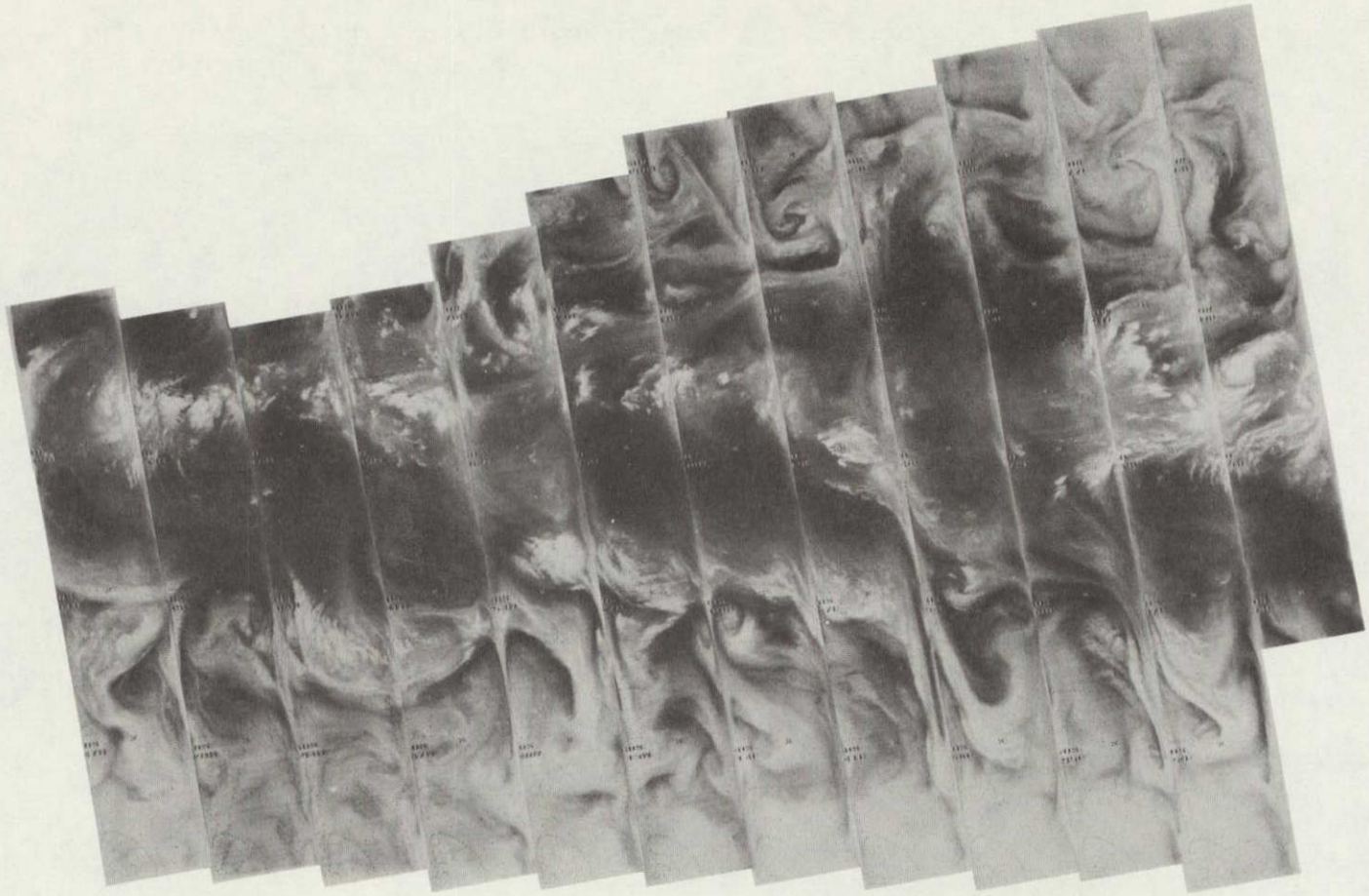

6186 6185 6184 6183 6182 6181 6180 6179 6178 6177 6176 6175 6174

15 SEP 76

6.7μm

6186 6185 6184 6183 6182 6181 6180 6179 6178 6177 6176 6175 6174

15 SEP 76

11.5μm

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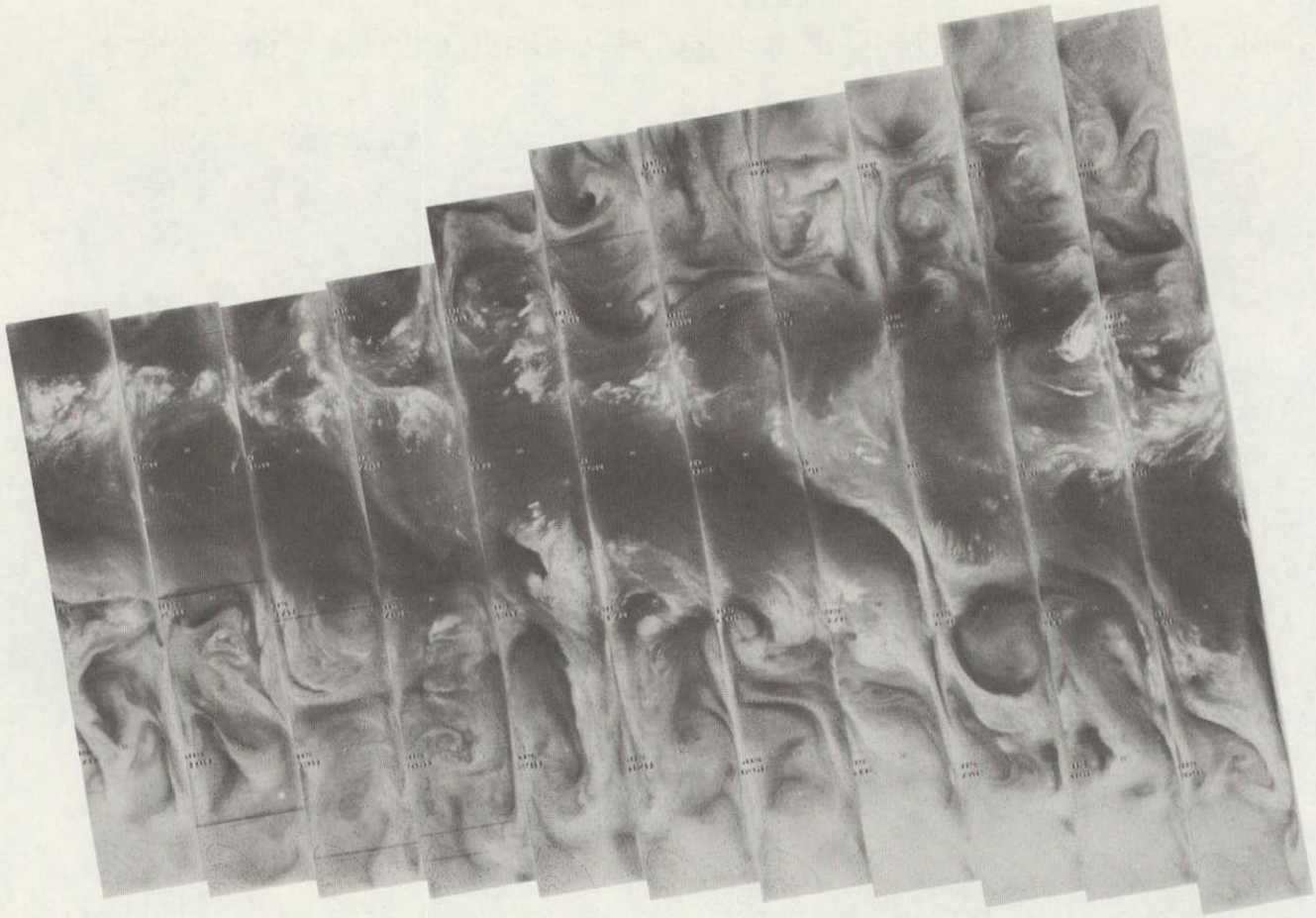

6199 6198 6197 6196 6195 6194 6193 6192 6191 6190 6189 6188 6187

16 SEP 76

6.7μm

6199 6198 6197 6196 6195 6194 6193 6192 6191 6190 6189 6188 6187

16 SEP 76

11.5μm

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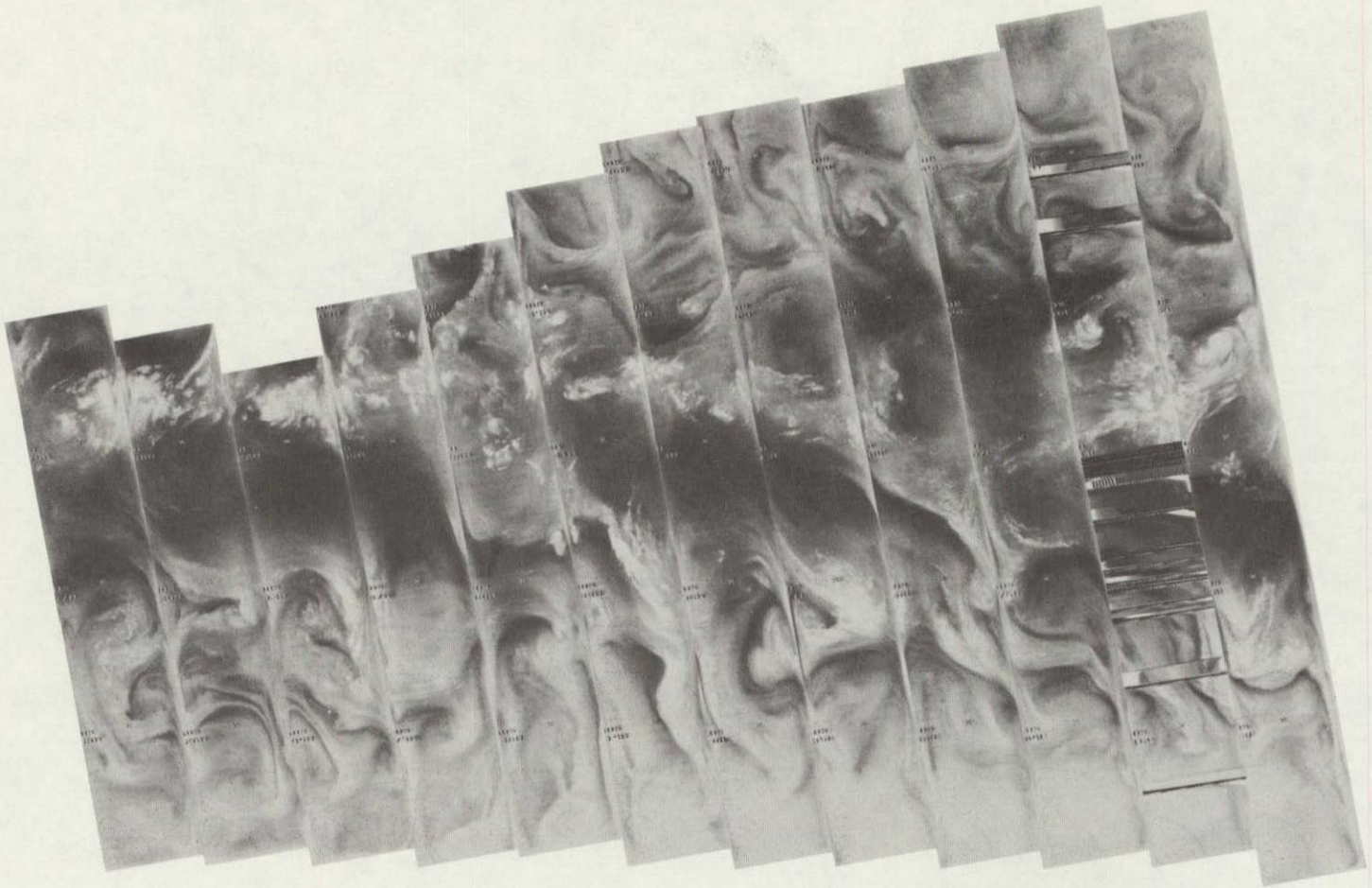

6213 6212 6211 6210 6209 6208 6207 6206 6205 6204 6203 6202 6201 6200

17 SEP 76

6.7μm

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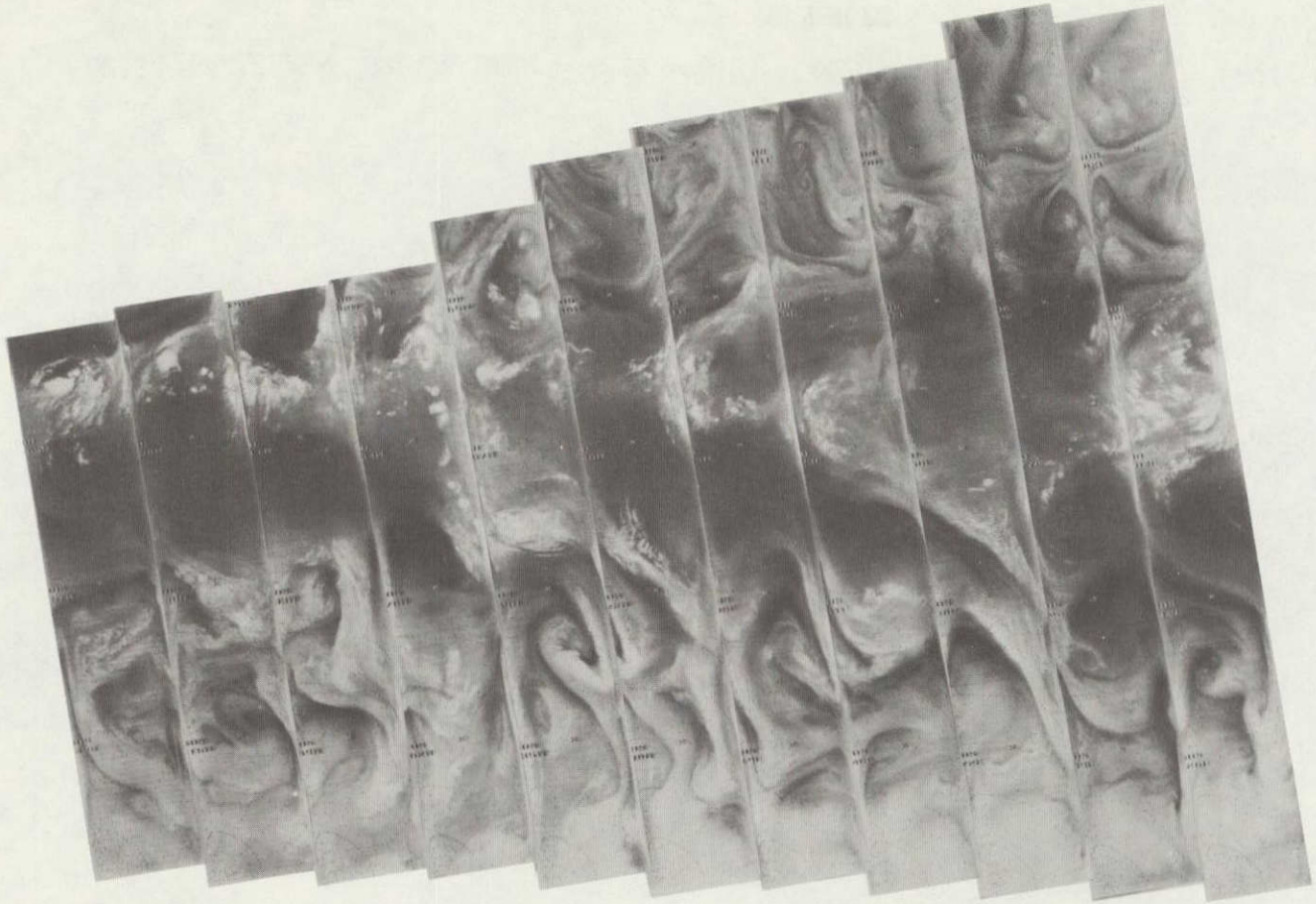

6226 6225 6224 6223 6222 6221 6220 6219 6218 6217 6216 6215 6214

18 SEP 76

6.7μm

6226 6225 6224 6223 6222 6221 6220 6219 6218 6217 6216 6215 6214

18 SEP 76

11.5μm

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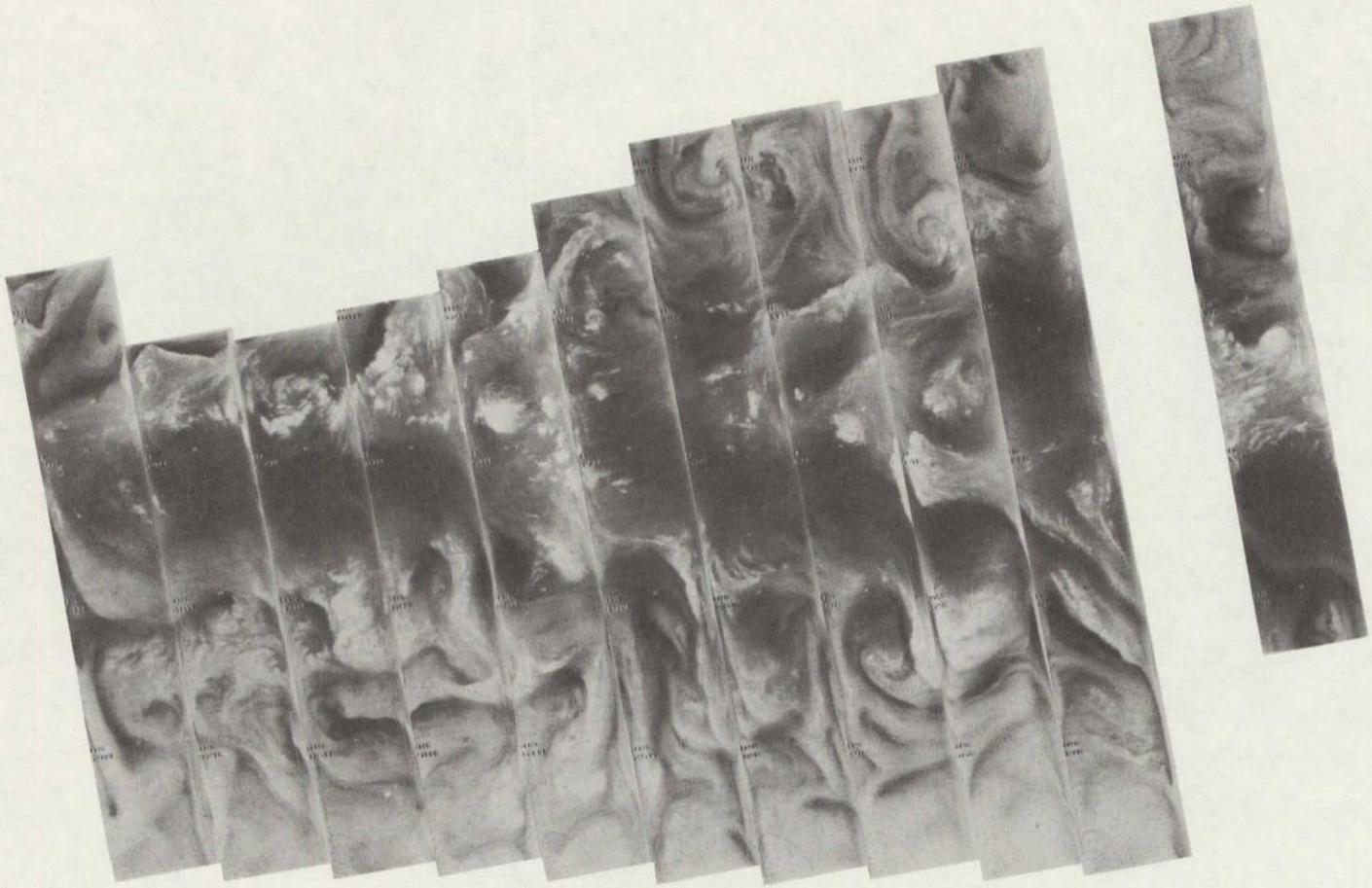

6240 6239 6238 6237 6236 6235 6234 6233 6232 6231 6230 6229 6228 6227

19 SEP 76

6.7μm

6240 6239 6238 6237 6236 6235 6234 6233 6232 6231 6230 6229 6228 6227

19 SEP 76

11.5μm

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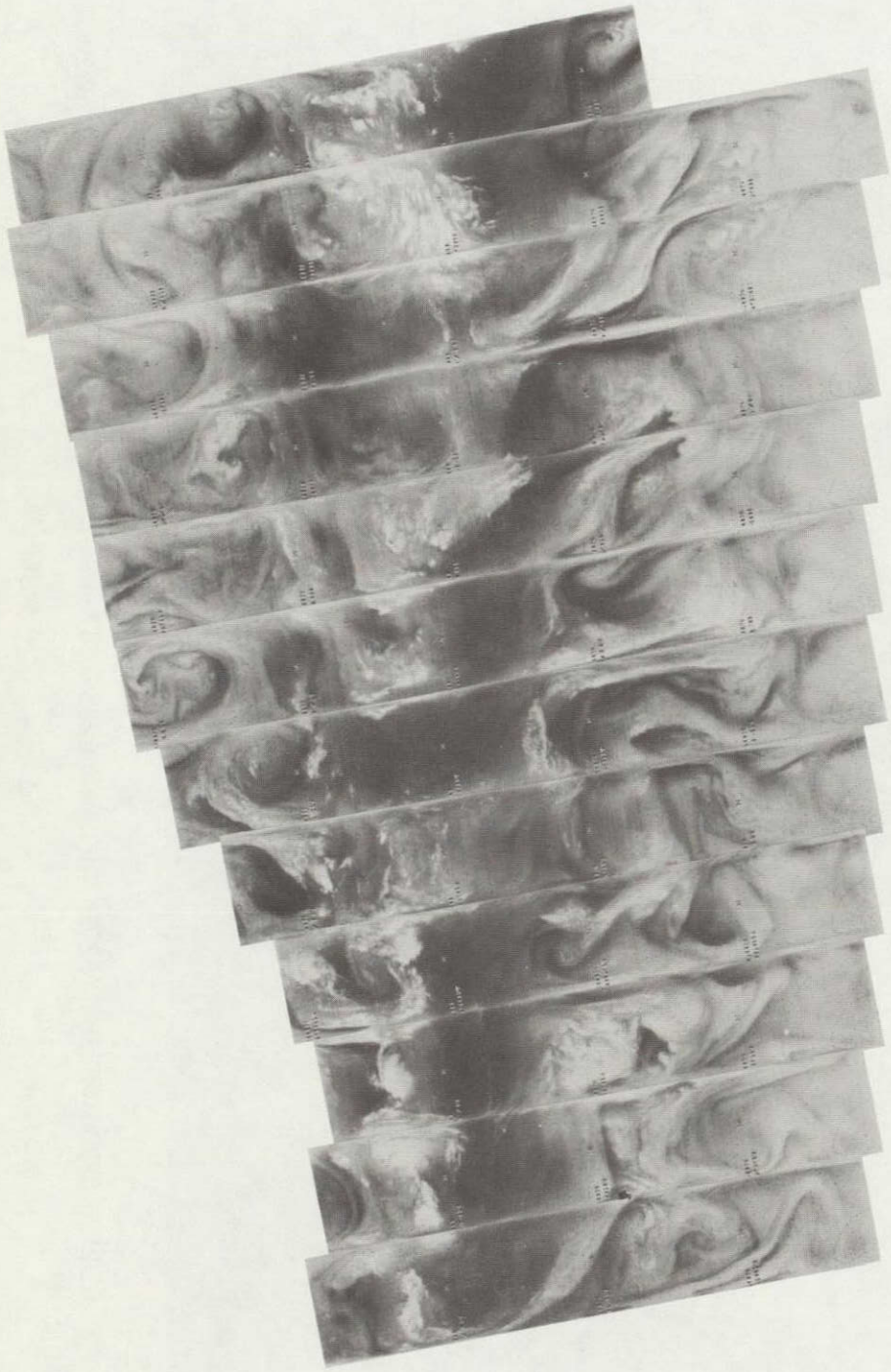

6241 6242 6243 6244 6245 6246 6247 6248 6249 6250 6251 6252 6253

20 SEP 76

6.7 μm

6253 6252 6251 6250 6249 6248 6247 6246 6245 6244 6243 6242 6241

20 SEP 76

11.5μm

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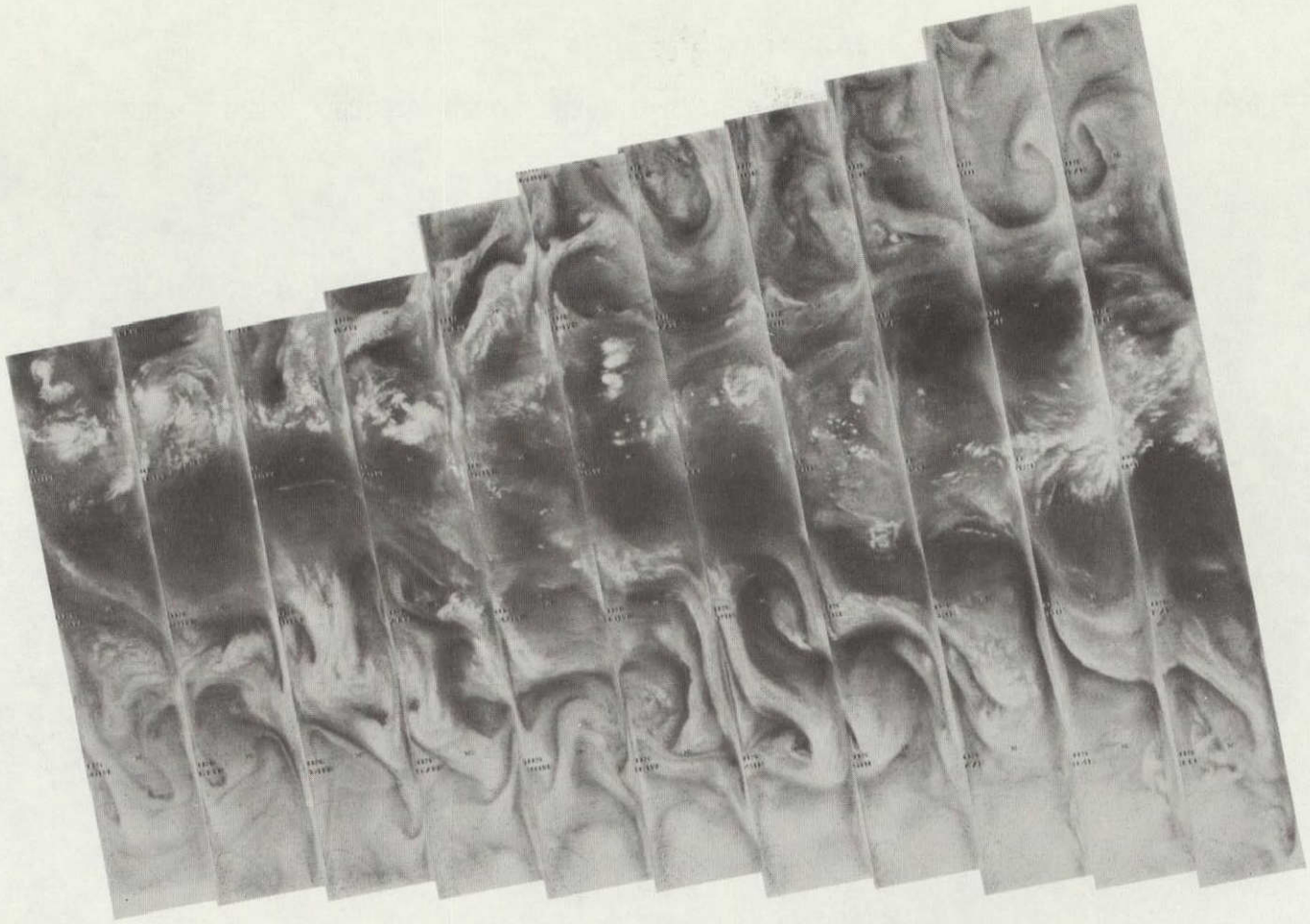


6266 6265 6264 6263 6262 6261 6260 6259 6258 6257 6256 6255 6254

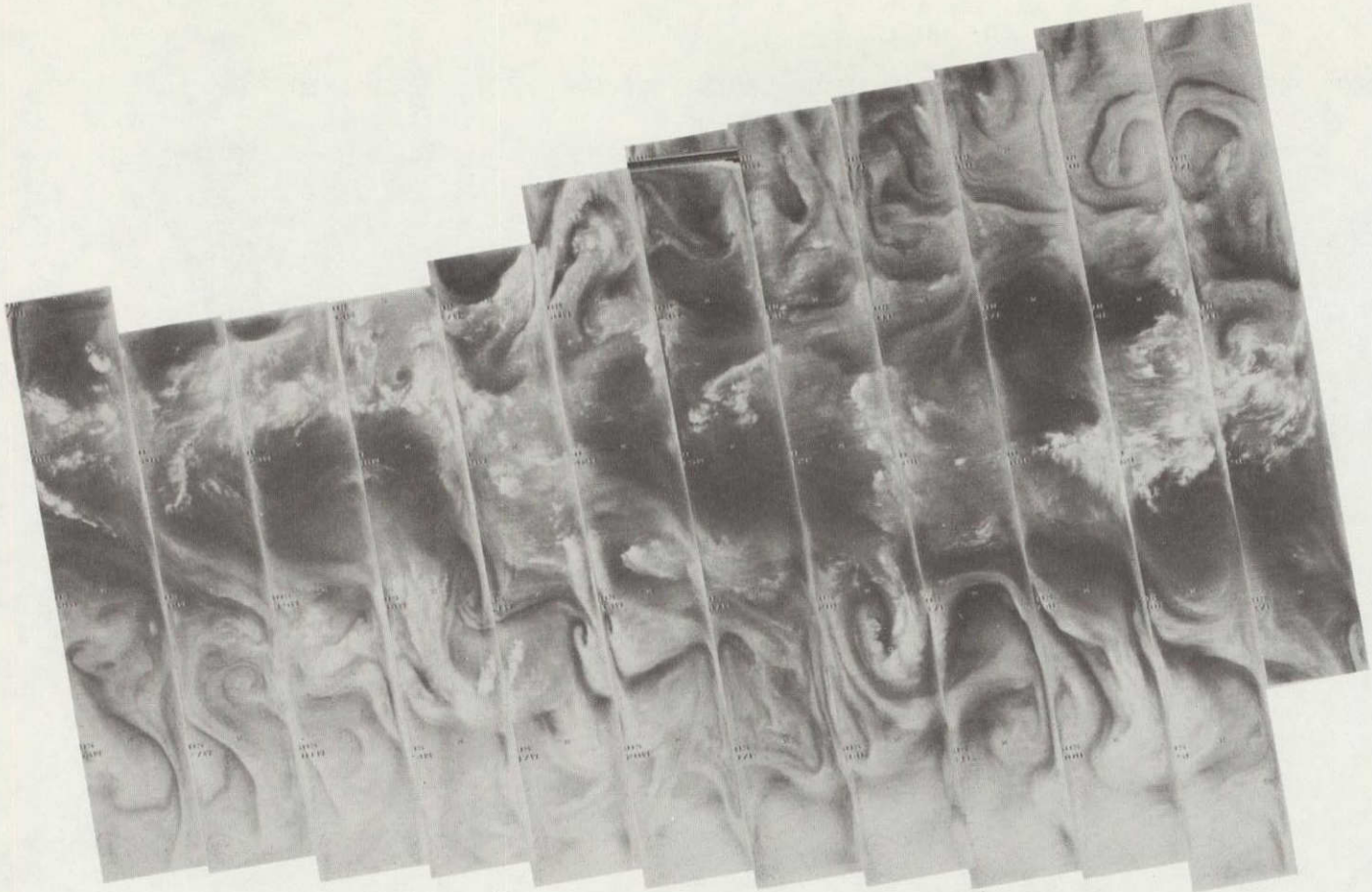
21 SEP 76

6.7μm

6266 6265 6264 6263 6262 6261 6260 6259 6258 6257 6256 6255 6254

21 SEP 76

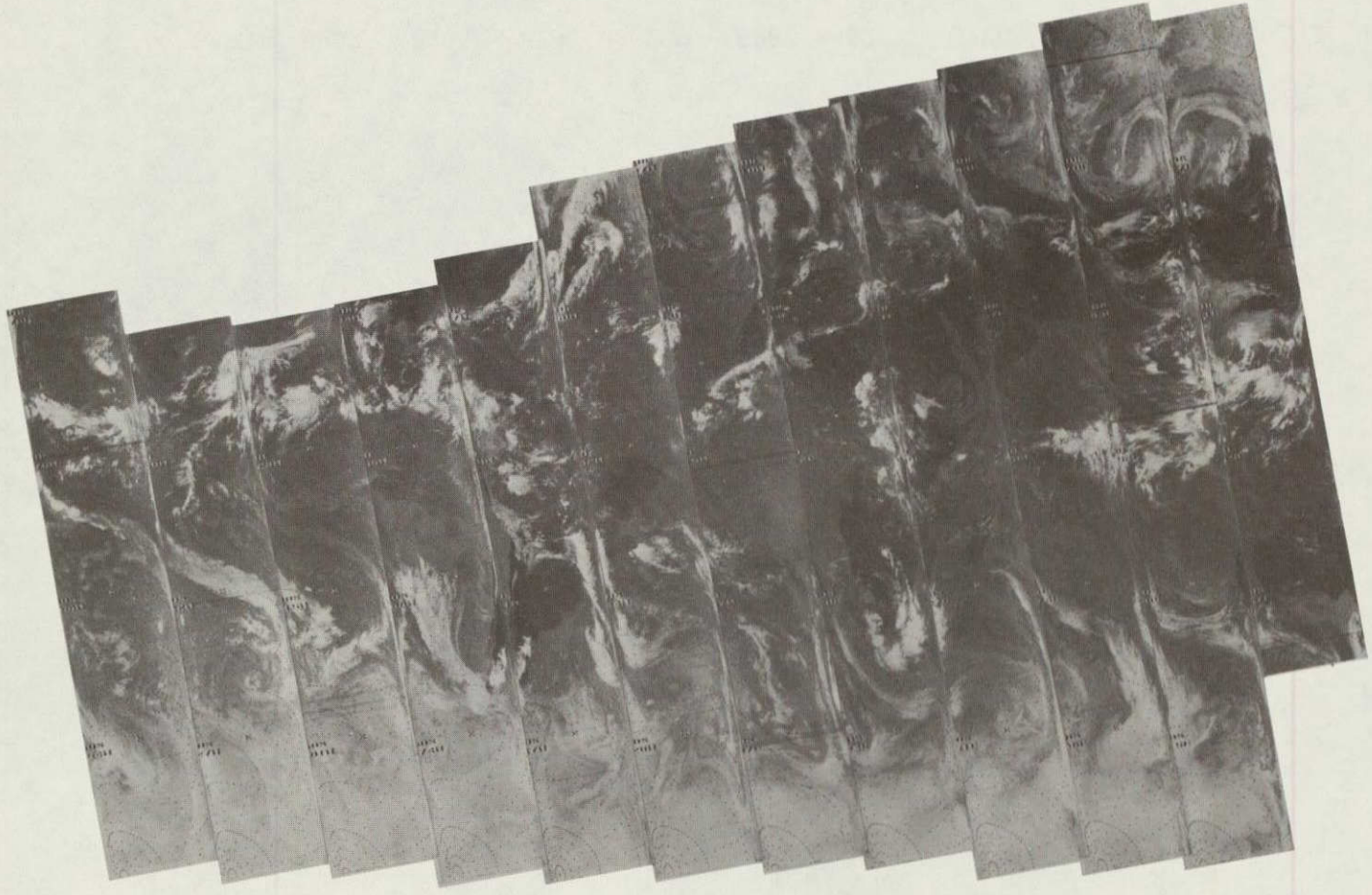
11.5μm



6280 6279 6278 6277 6276 6275 6274 6273 6272 6271 6270 6269 6268 6267

22 SEP 76

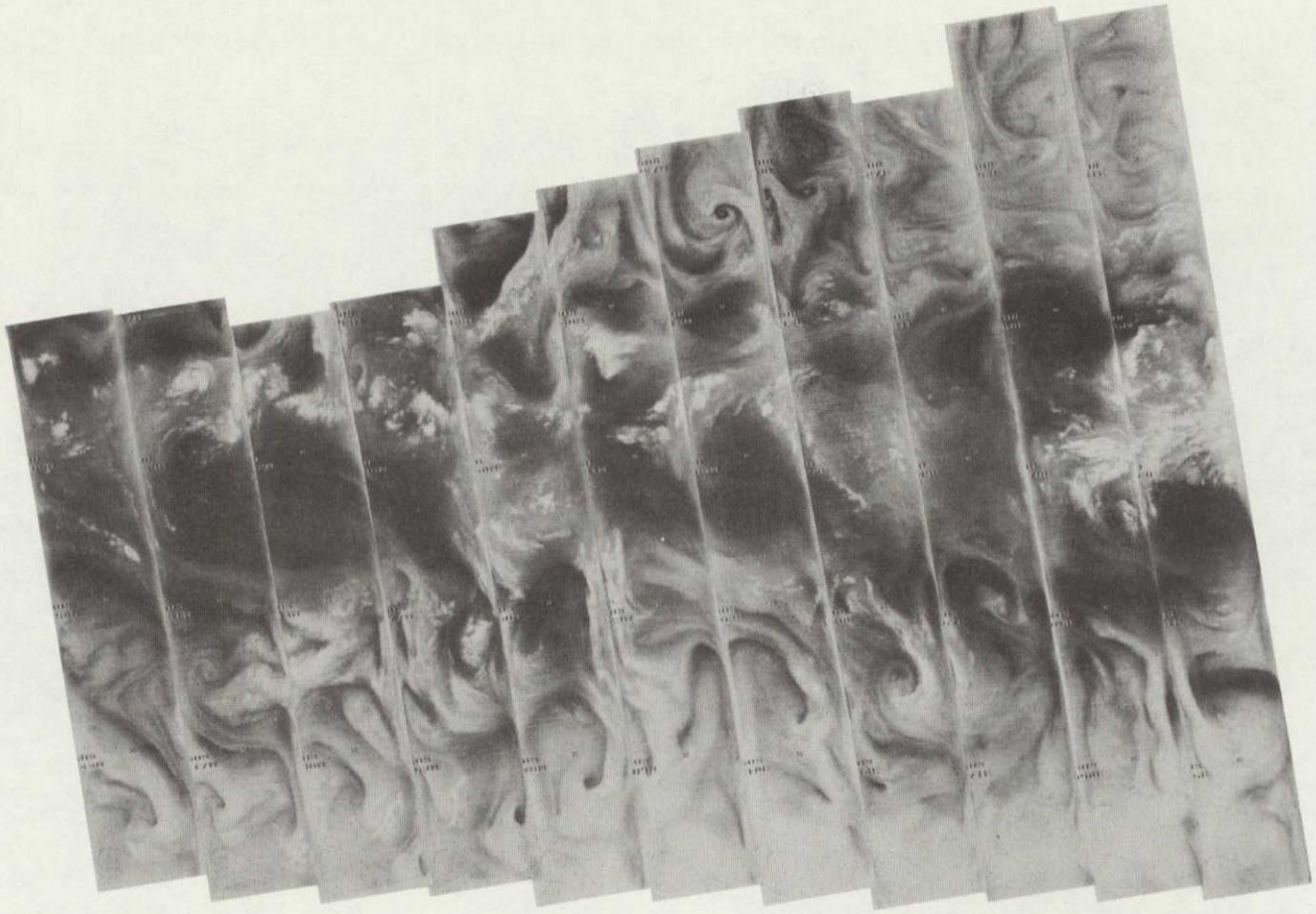
6.7μm



6280 6279 6278 6277 6276 6275 6274 6273 6272 6271 6270 6269 6268 6267

22 SEP 76

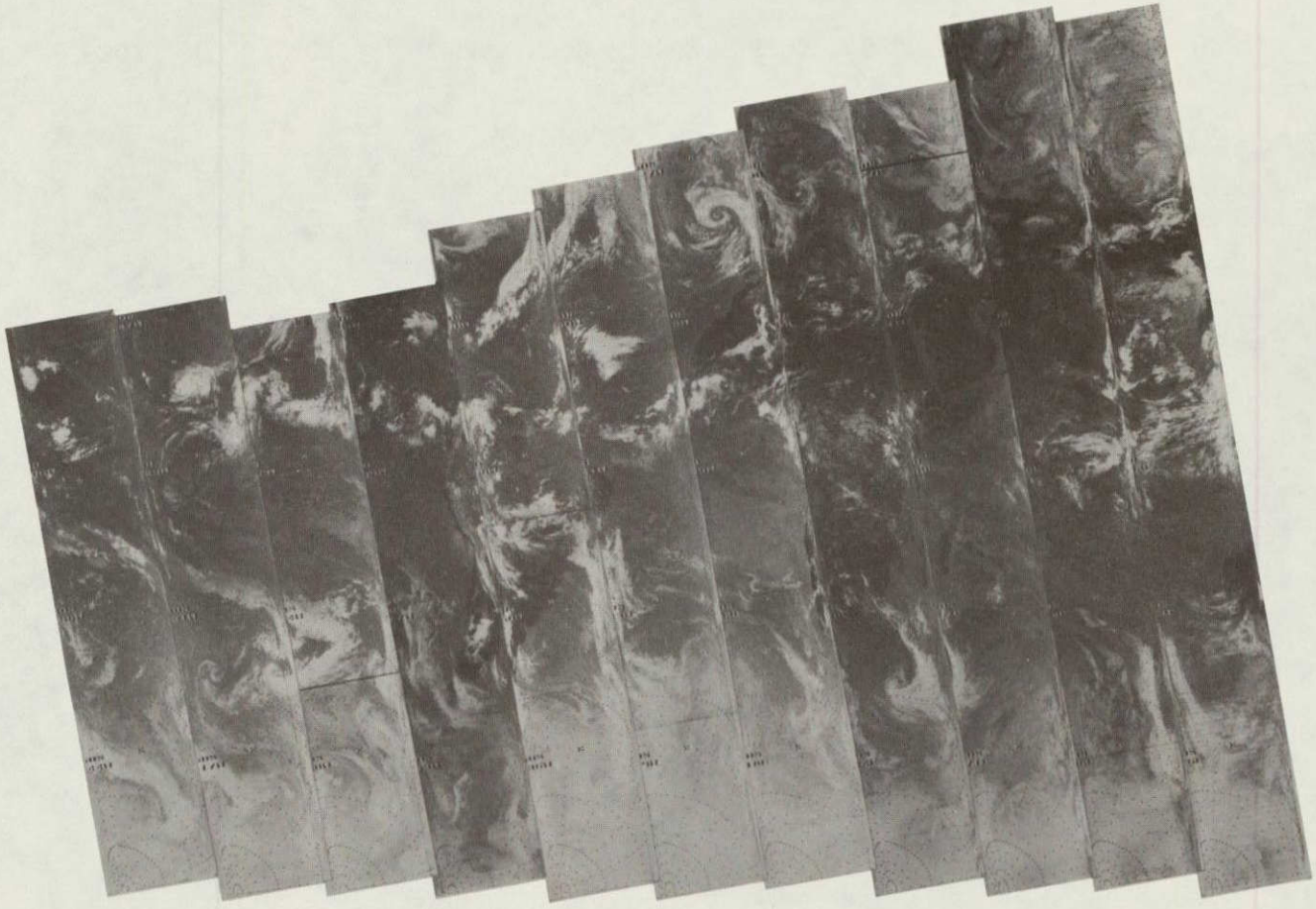
11.5μm



6293 6292 6291 6290 6289 6288 6287 6286 6285 6284 6283 6282 6281

23 SEP 76

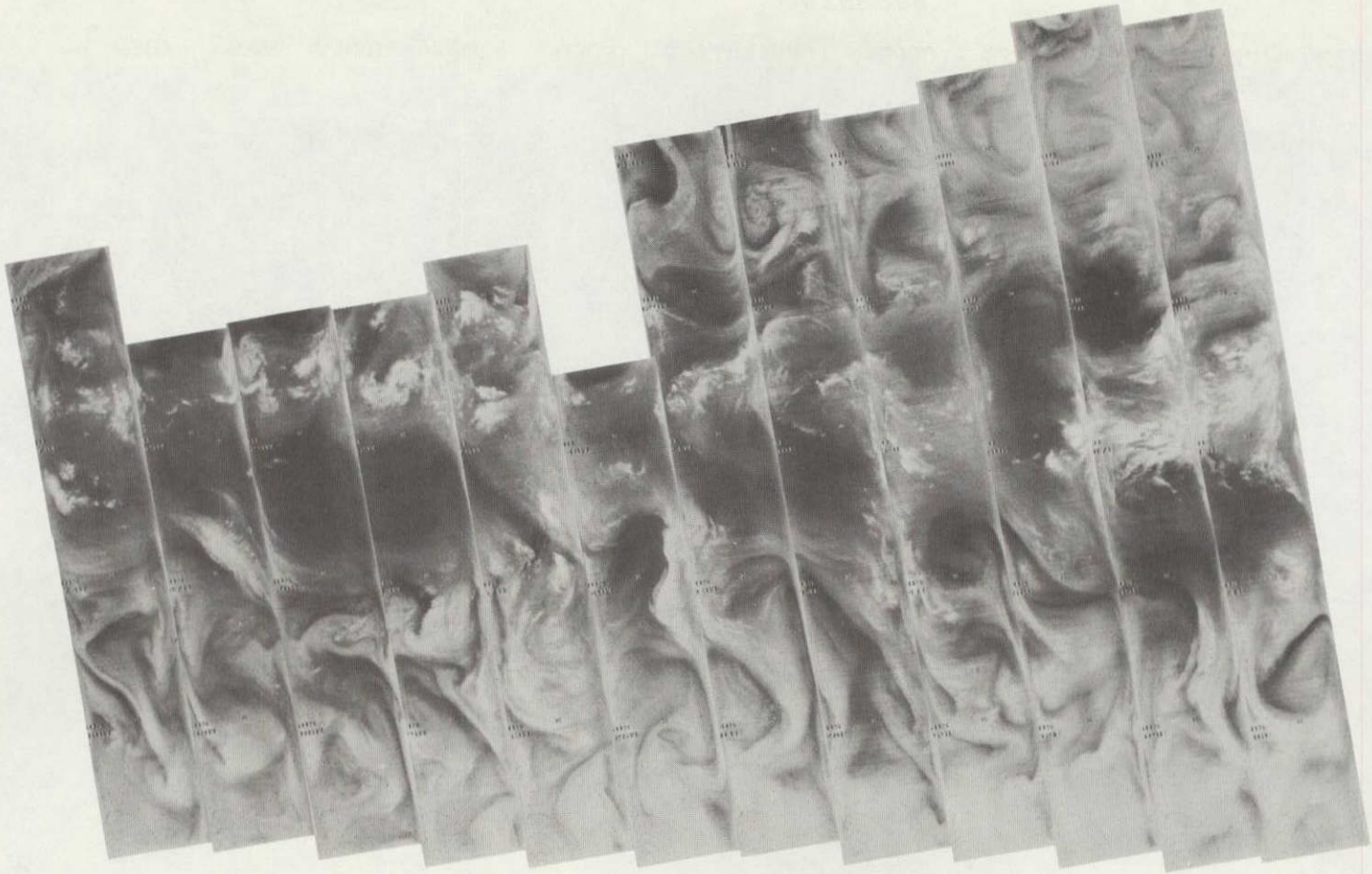
6.7μm



6293 6292 6291 6290 6289 6288 6287 6286 6285 6284 6283 6282 6281

23 SEP 76

11.5μm



6307 6306 6305 6304 6303 6302 6301 6300 6299 6298 6297 6296 6295 6294

24 SEP 76

6.7μm

6307 6306 6305 6304 6303 6302 6301 6300 6329 6328 6327 6326 6325 6324

24 SEP 76

11.5μm

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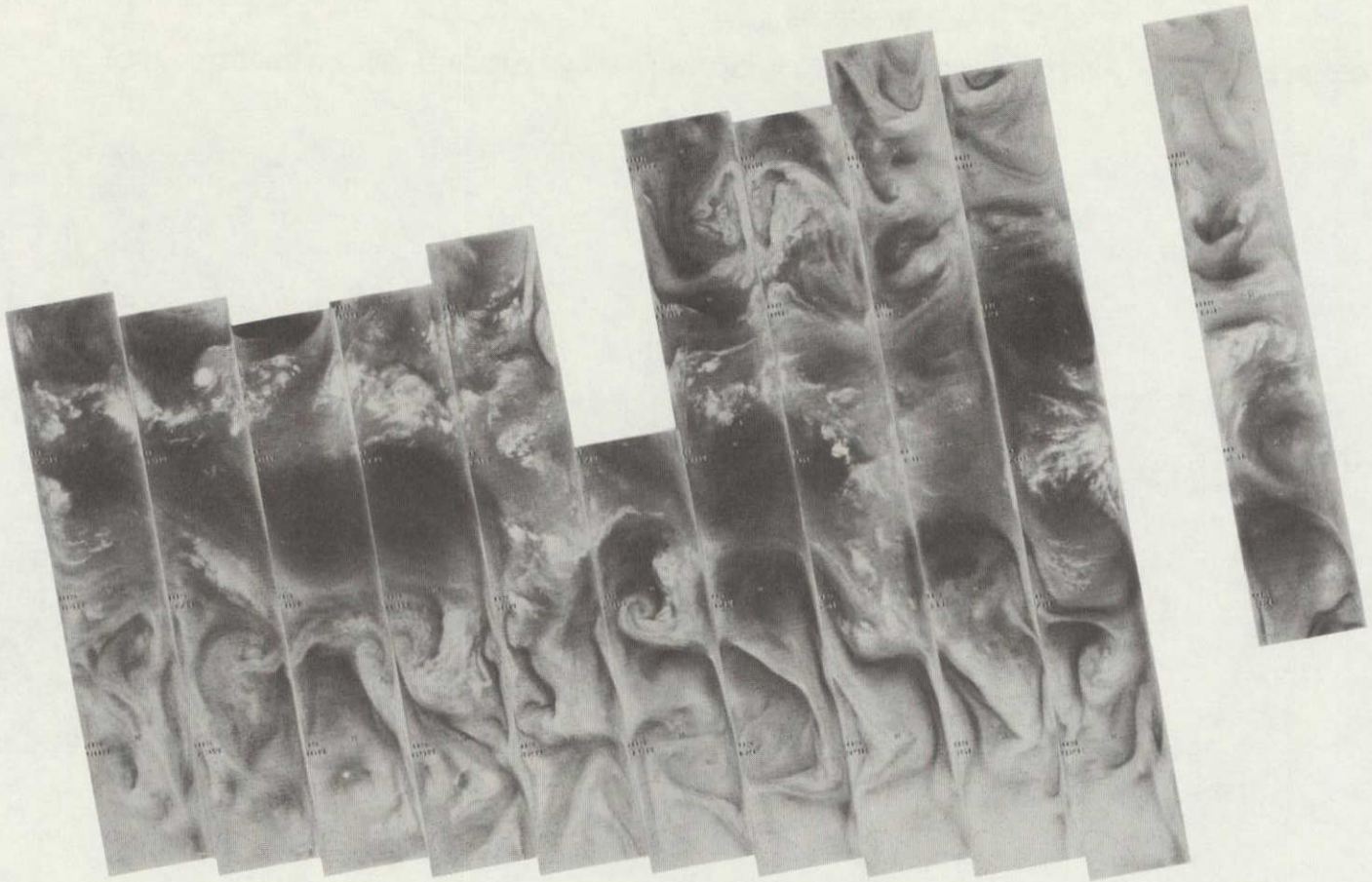

6320 6319 6318 6317 6316 6315 6314 6313 6312 6311 6310 6309 6308

25 SEP 76

6.7μm

6320 6319 6318 6317 6316 6315 6314 6313 6312 6311 6310 6309 6308

25 SEP 76

11.5μm

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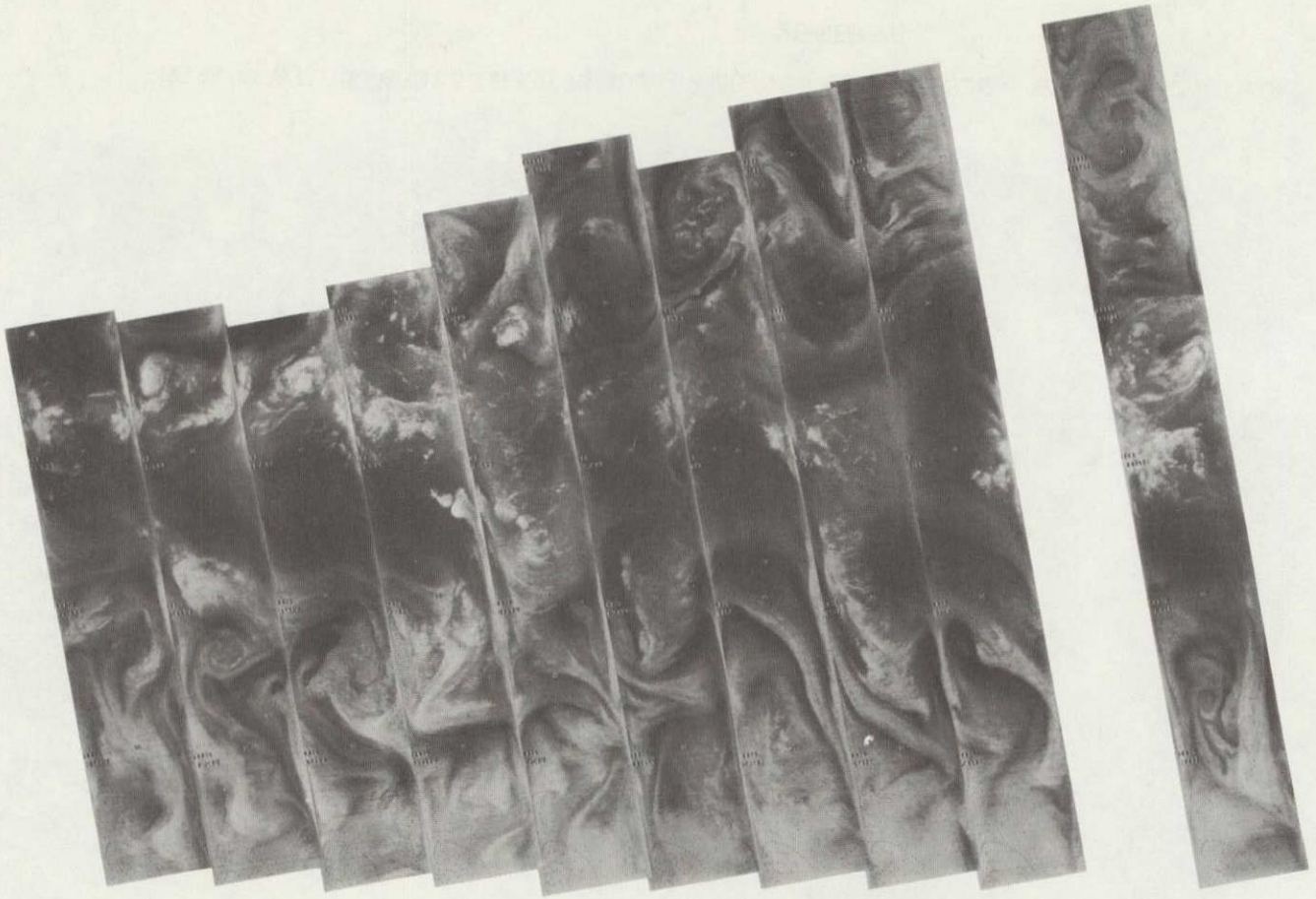
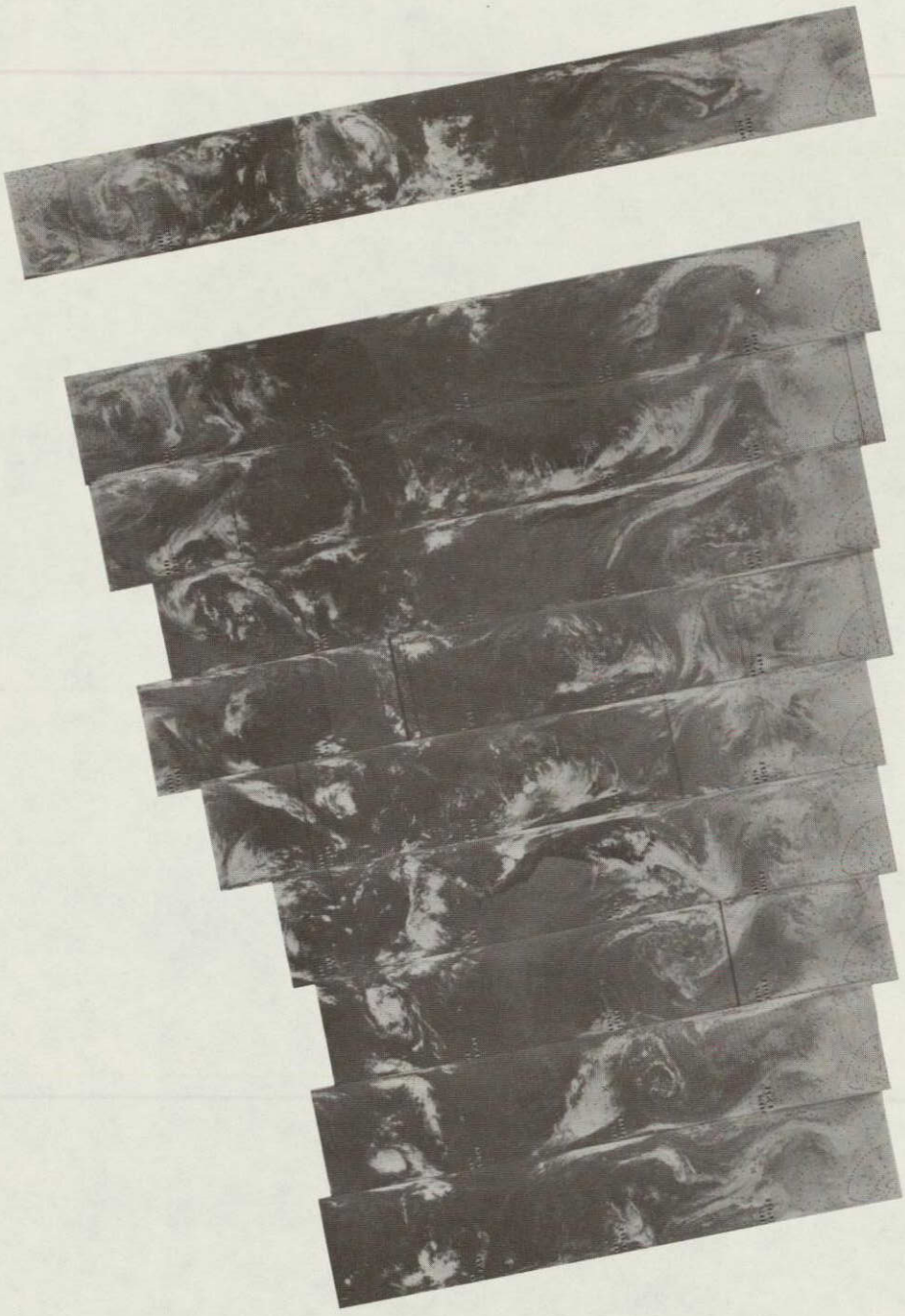


6333 6332 6331 6330 6329 6328 6327 6326 6325 6324 6323 6322 6321

26 SEP 76

6.7μm



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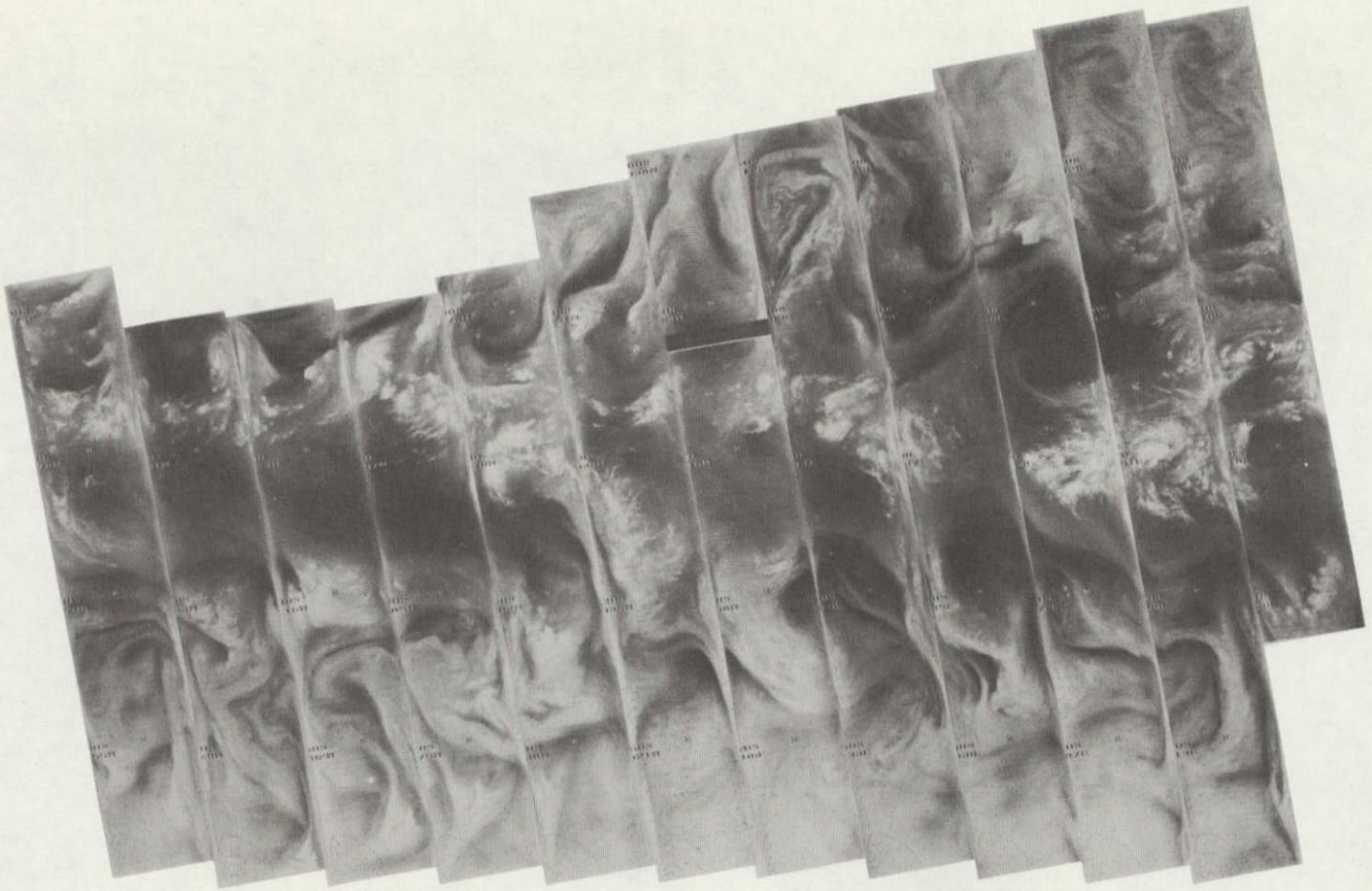

6347 6346 6345 6344 6343 6342 6341 6340 6339 6338 6337 6336 6335 6334

27 SEP 76

6.7μm

6347 6346 6345 6344 6343 6342 6341 6340 6339 6338 6337 6336 6335 6334

27 SEP 76

11.5μm

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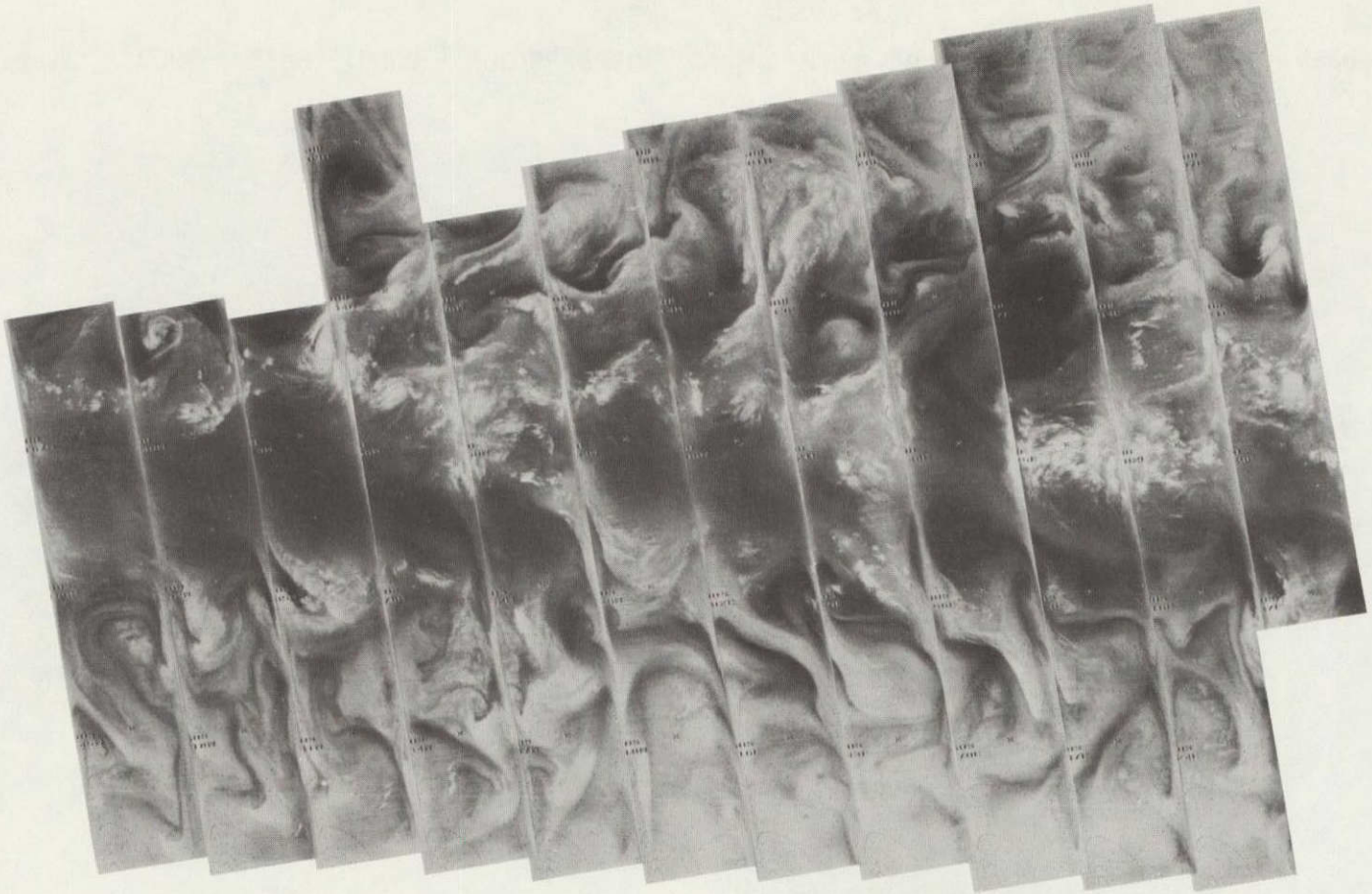

6360 6359 6358 6357 6356 6355 6354 6353 6352 6351 6350 6349 6348

28 SEP 76

6.7μm

6360 6359 6358 6357 6356 6355 6354 6353 6352 6351 6350 6349 6348

28 SEP 76

11.5μm

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6374 6373 6372 6371 6370 6369 6368 6367 6366 6365 6364 6363 6362 6361

29 SEP 76

6.7μm

6374 6373 6372 6371 6370 6369 6368 6367 6366 6365 6364 6363 6362 6361

29 SEP 76

11.5μm

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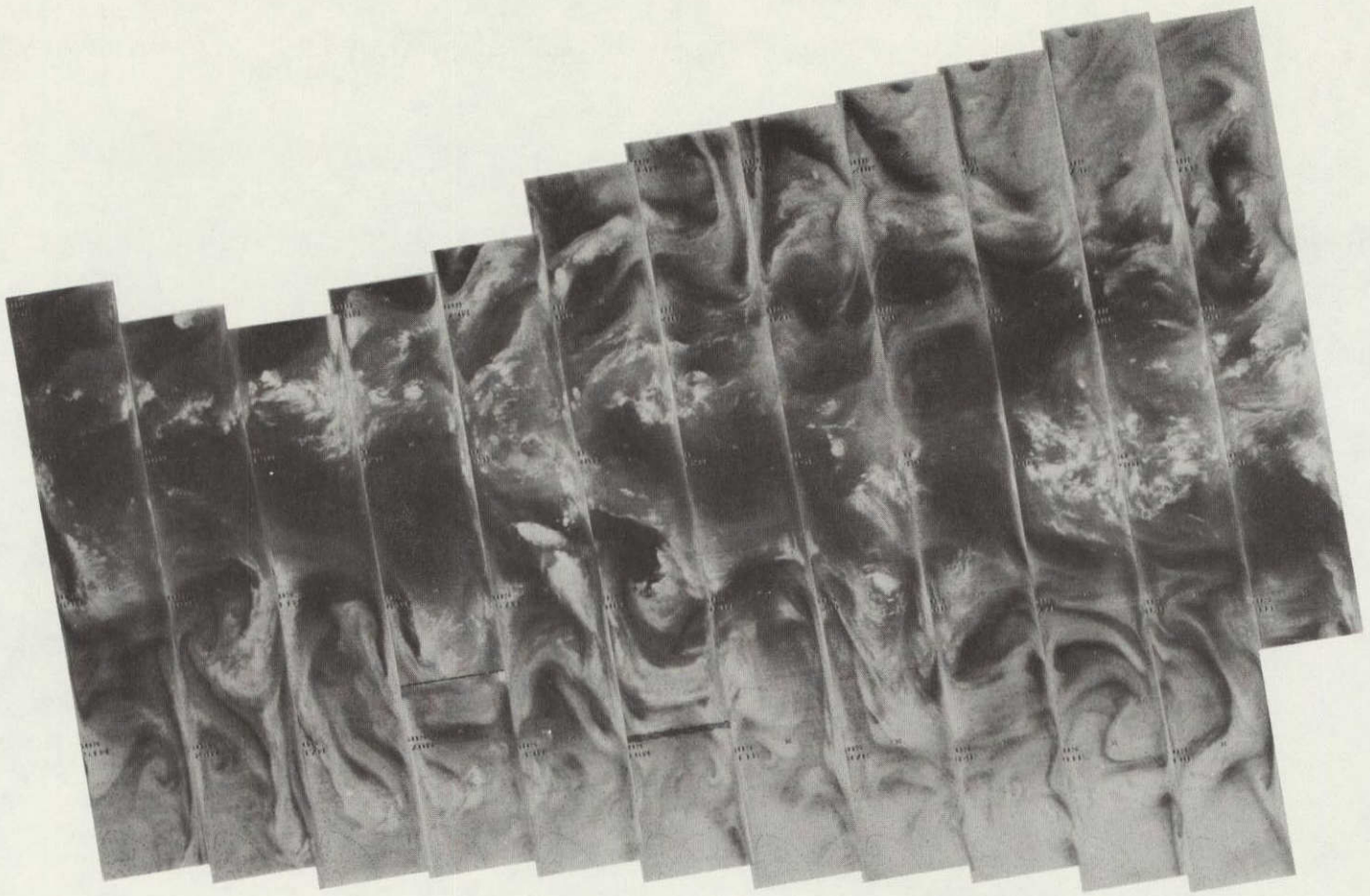

6387 6386 6385 6384 6383 6382 6381 6380 6379 6378 6377 6376 6375

30 SEP 76

6.7μm

6387 6386 6385 6384 6383 6382 6381 6380 6379 6378 6377 6376 6375

30 SEP 76

11.5μm

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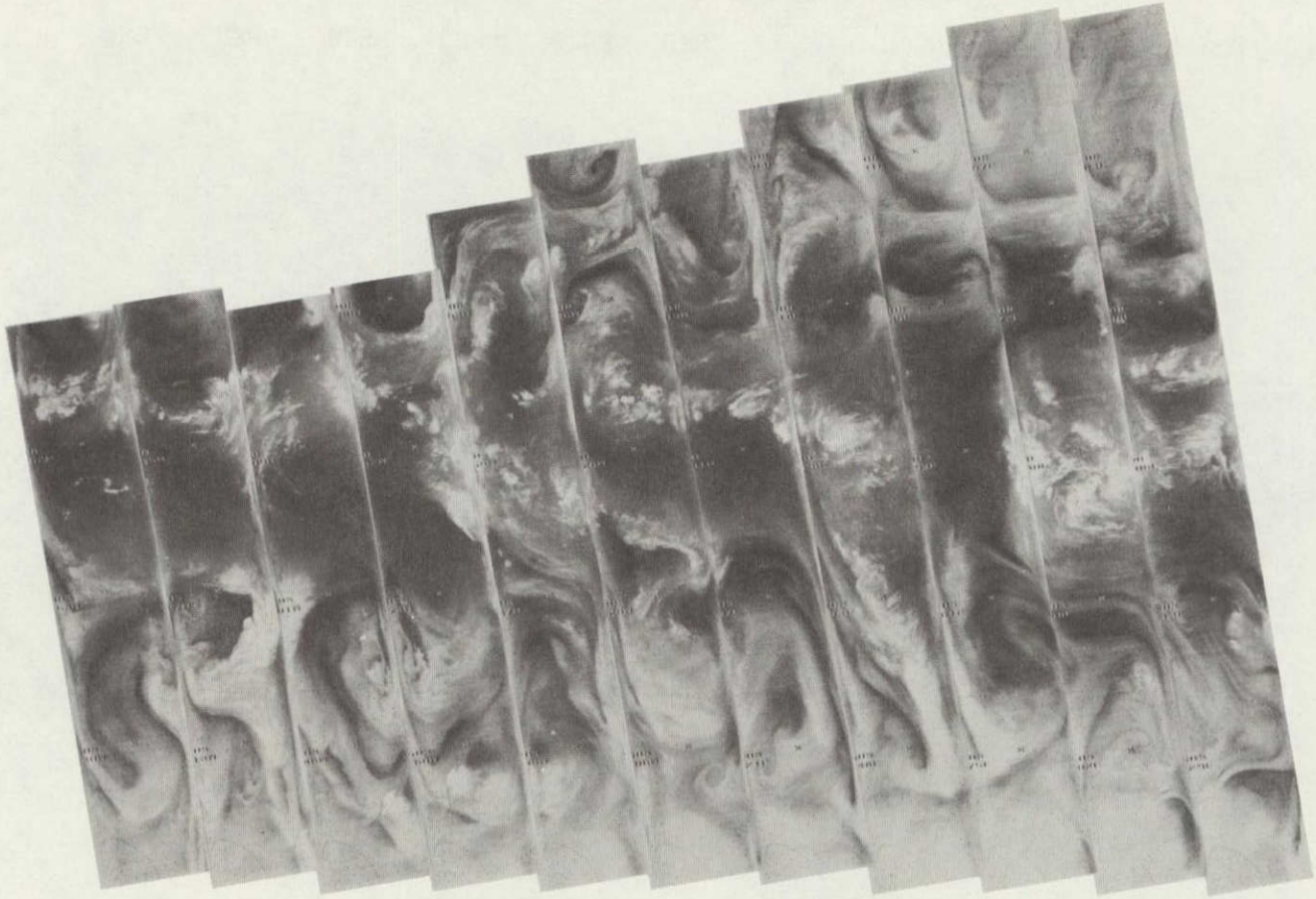

6400 6399 6398 6397 6396 6395 6394 6393 6392 6391 6390 6389 6388

1 OCT 76

6.7μm

6400 6399 6398 6397 6396 6395 6394 6393 6392 6391 6390 6389 6388

1 OCT 76

11.5μm

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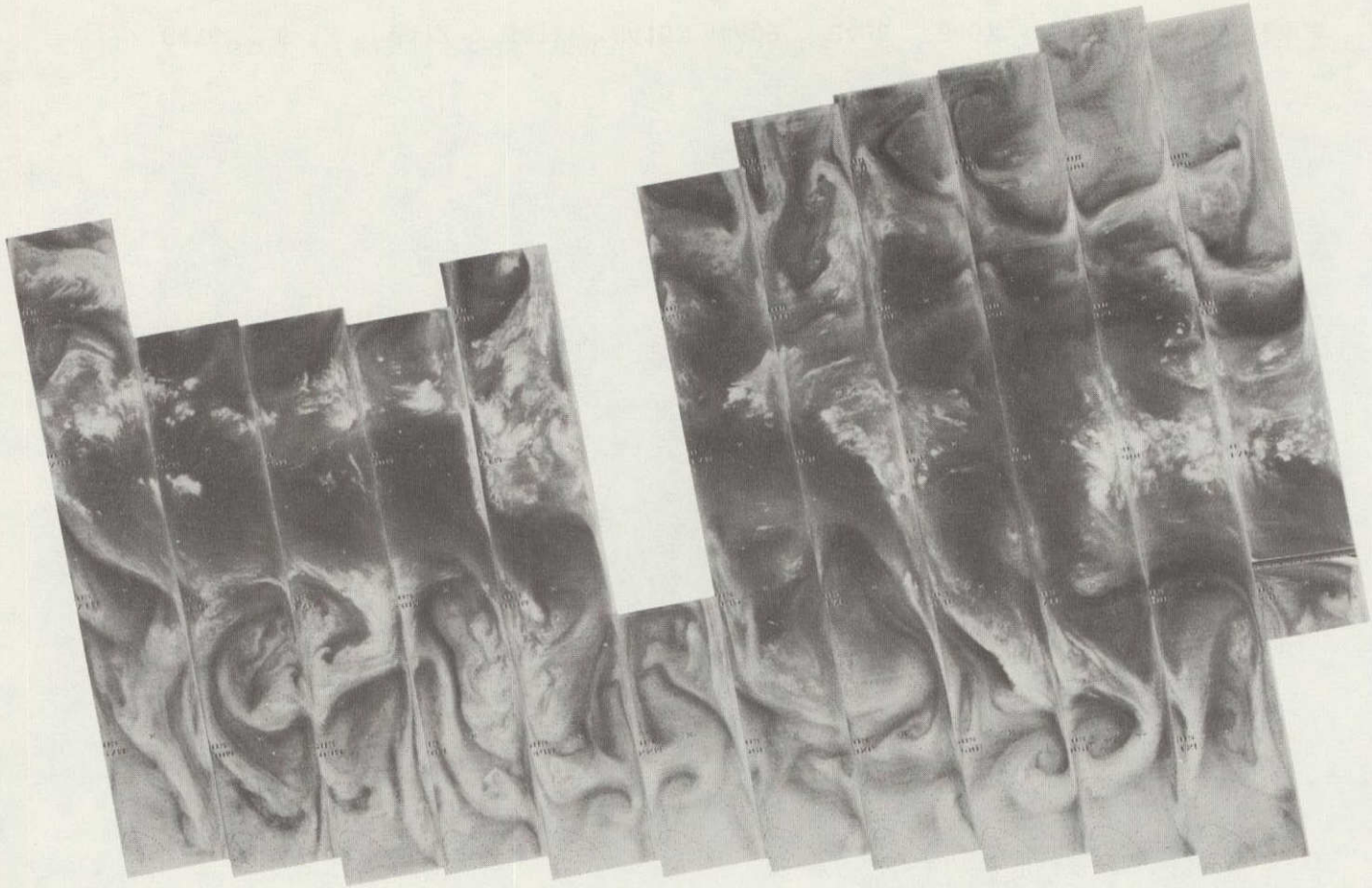
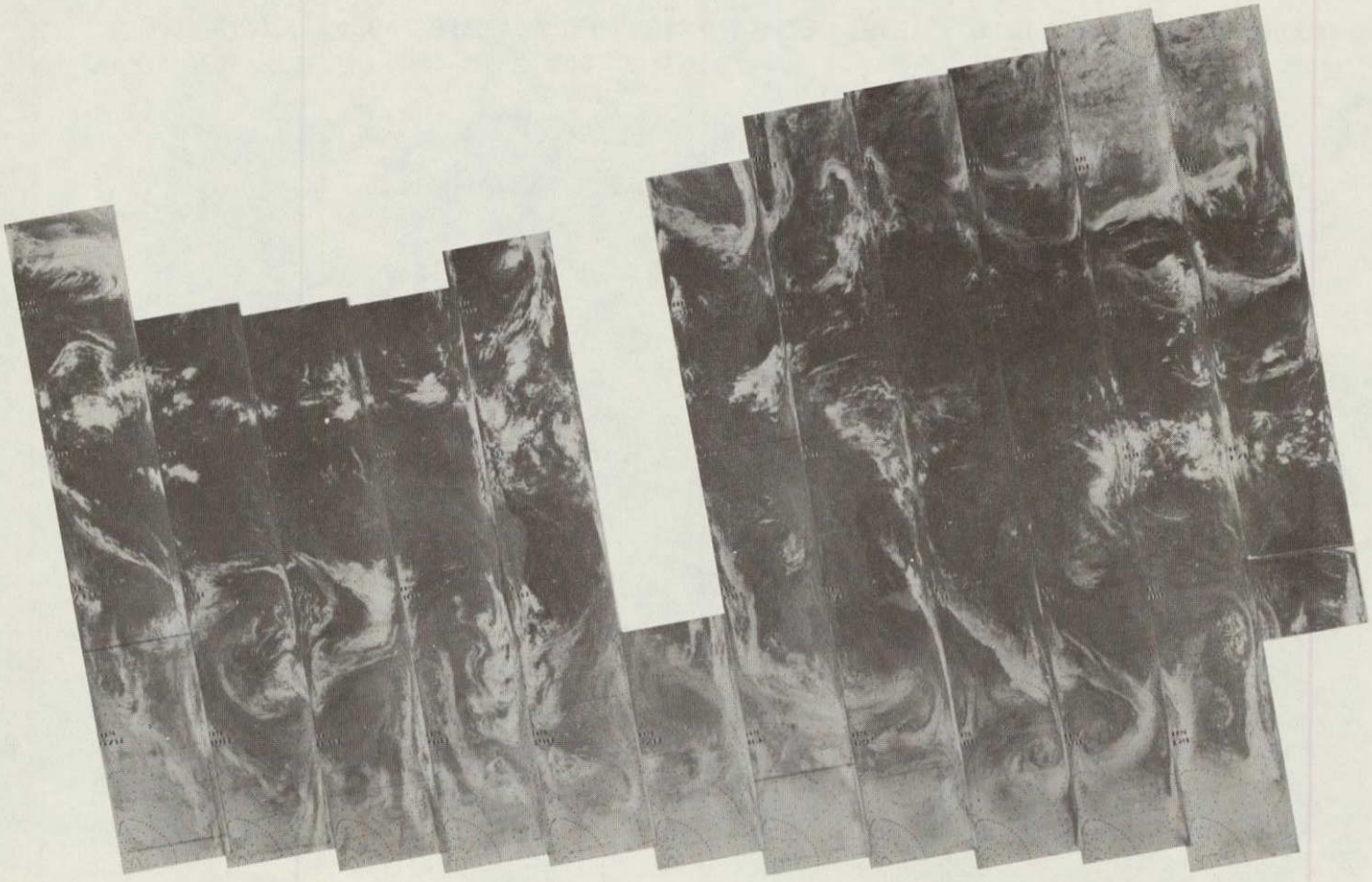


6414 6413 6412 6411 6410 6409 6408 6407 6406 6405 6404 6403 6402 6401

2 OCT 76

6.7μm



6414 6413 6412 6411 6410 6409 6408 6407 6406 6405 6404 6403 6402 6401

2 OCT 76

11.5μm

6427 6426 6425 6424 6423 6422 6421 6420 6419 6418 6417 6416 6415

3 OCT 76

6.7μm

6427 6426 6425 6424 6423 6422 6421 6420 6419 6418 6417 6416 6415

3 OCT 76

11.5μm

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6441 6440 6439 6438 6437 6436 6435 6434 6433 6432 6431 6430 6429 6428

4 OCT 76

6.7μm

6441 6440 6439 6438 6437 6436 6435 6434 6433 6432 6431 6430 6429 6428

4 OCT 76

11.5μm

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6454 6453 6452 6451 6450 6449 6448 6447 6446 6445 6444 6443 6442

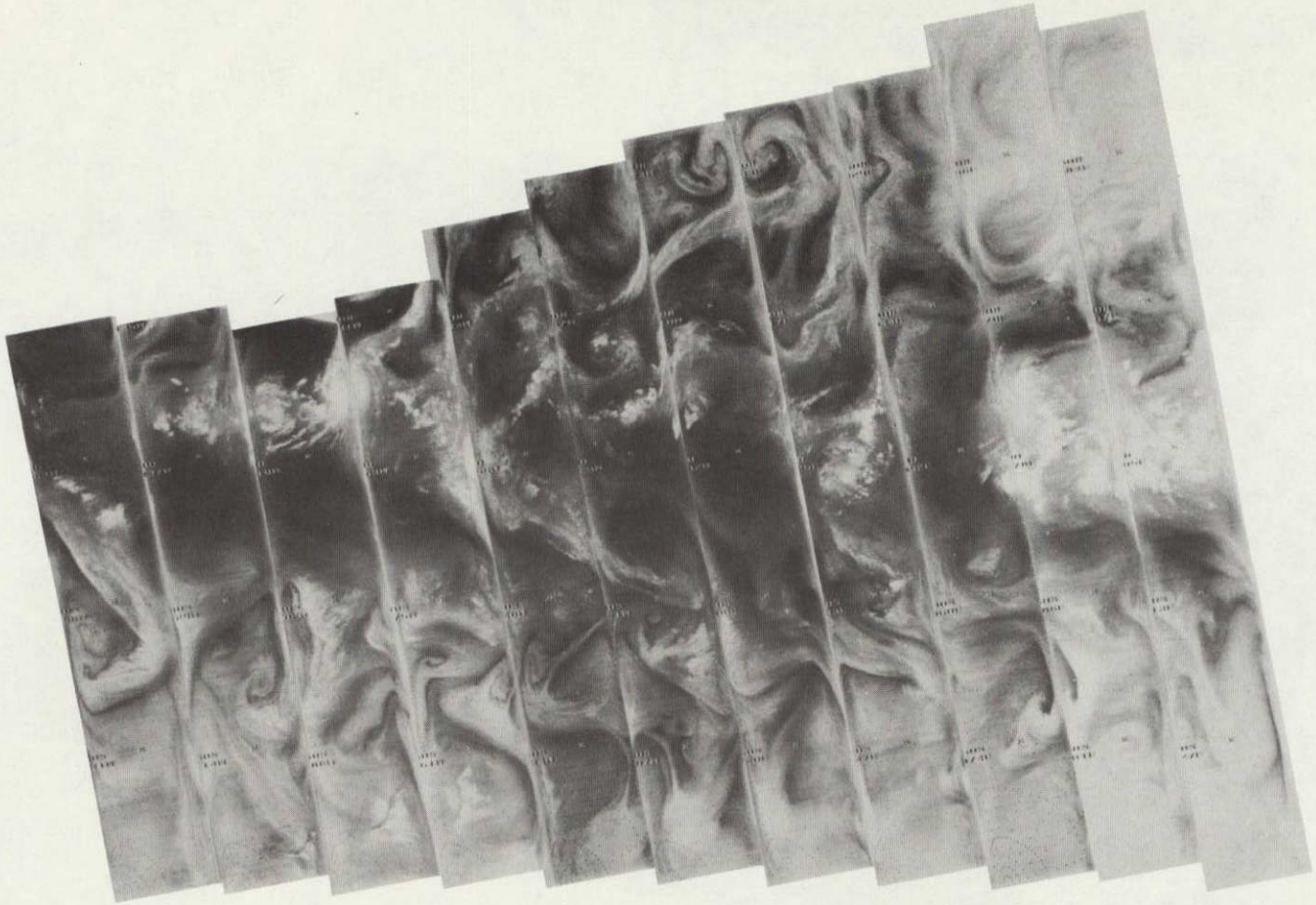
5 OCT 76

6.7μm

6454 6453 6452 6451 6450 6449 6448 6447 6446 6445 6444 6443 6442

5 OCT 76

11.5μm



6467 6466 6465 6464 6463 6462 6461 6460 6459 6458 6457 6456 6455

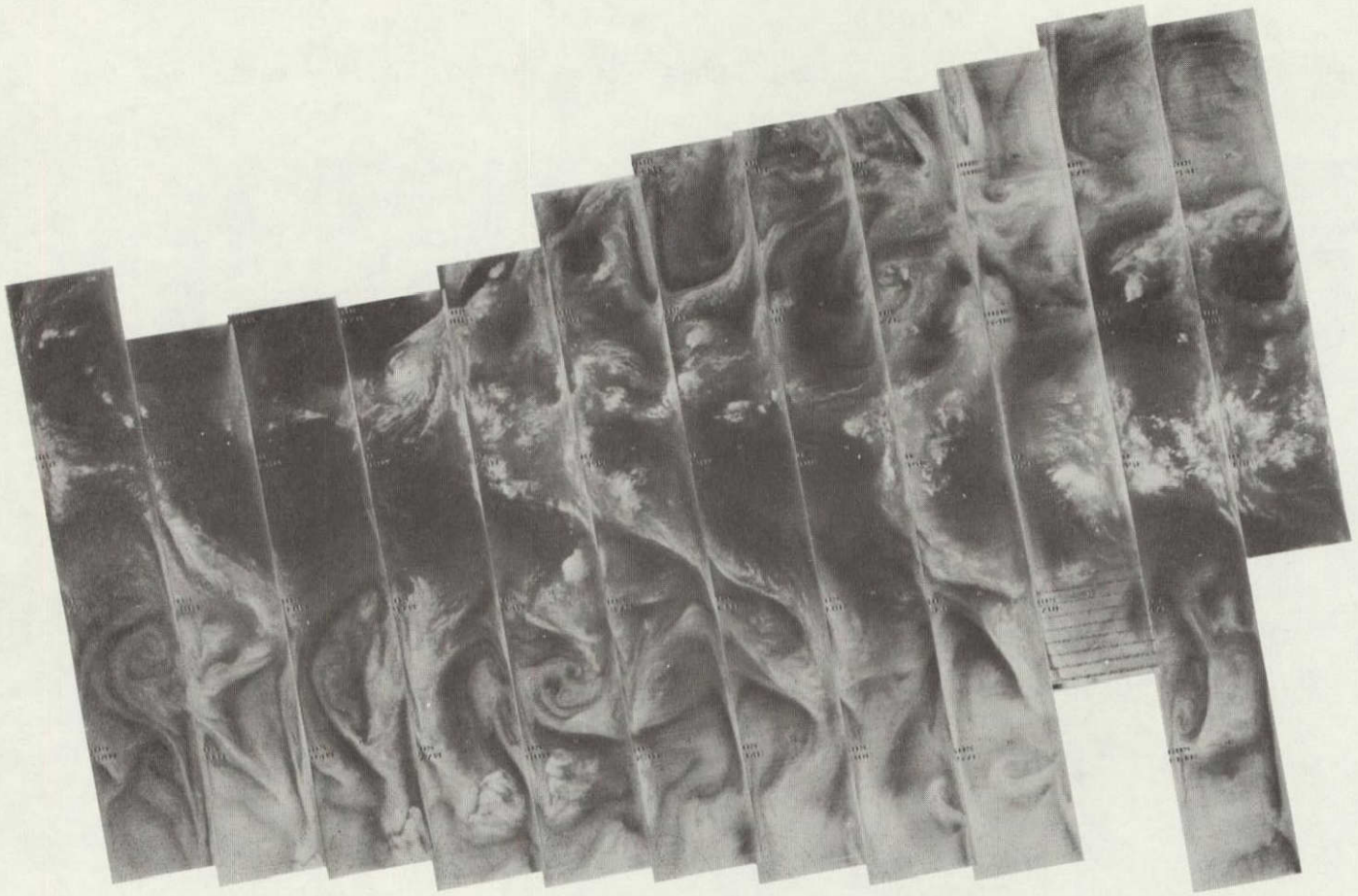
6 OCT 76

6.7μm

6467 6466 6465 6464 6463 6462 6461 6460 6459 6458 6457 6456 6455

6 OCT 76

11.5μm



6481 6480 6479 6478 6477 6476 6475 6474 6473 6472 6471 6470 6469 6468

7 OCT 76

6.7μm

6481 6480 6479 6478 6477 6476 6475 6474 6473 6472 6471 6470 6469 6468

7 OCT 76

11.5μm

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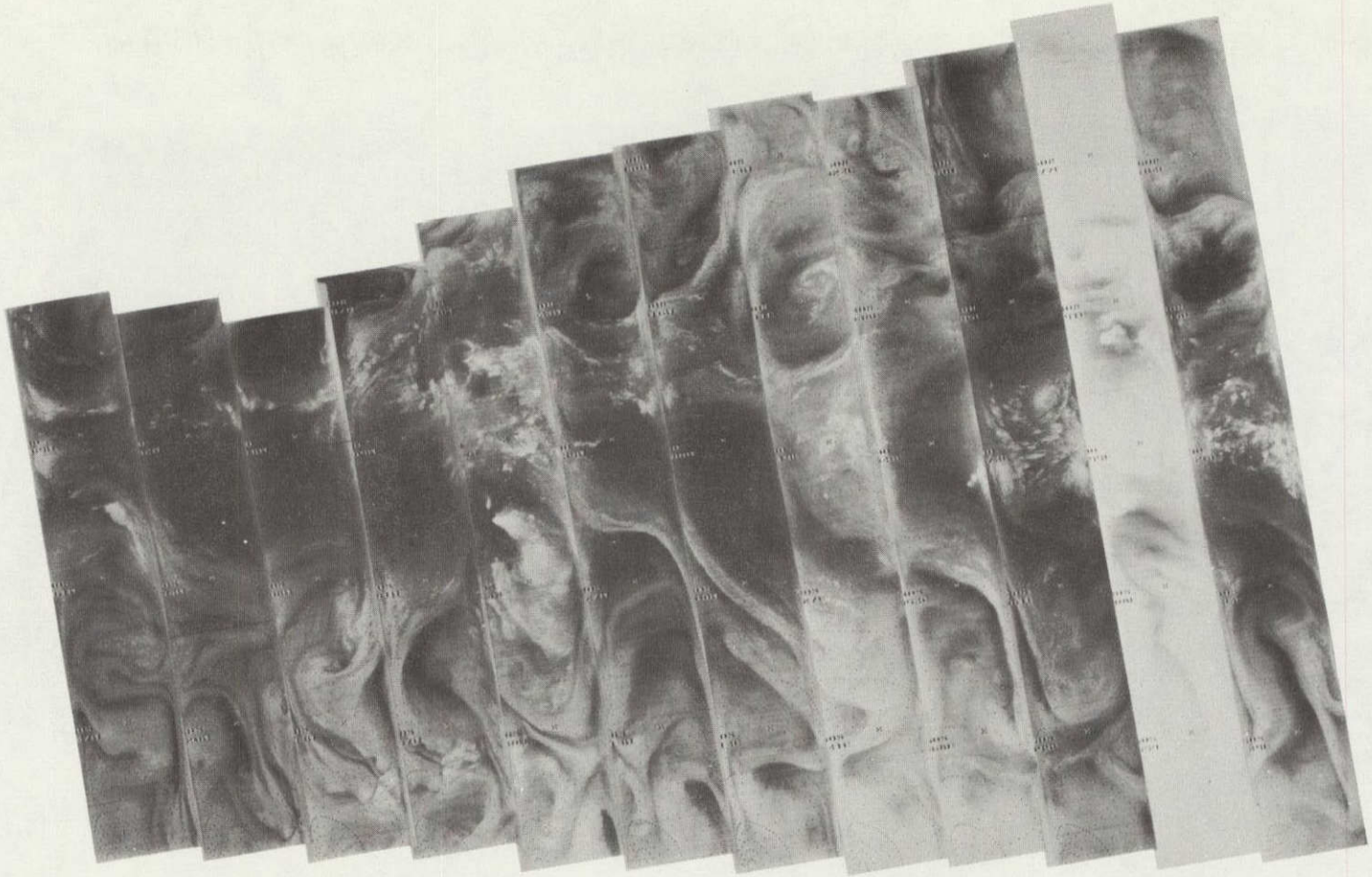

6494 6493 6492 6491 6490 6489 6488 6487 6486 6485 6484 6483 6482

8 OCT 76

6.7μm

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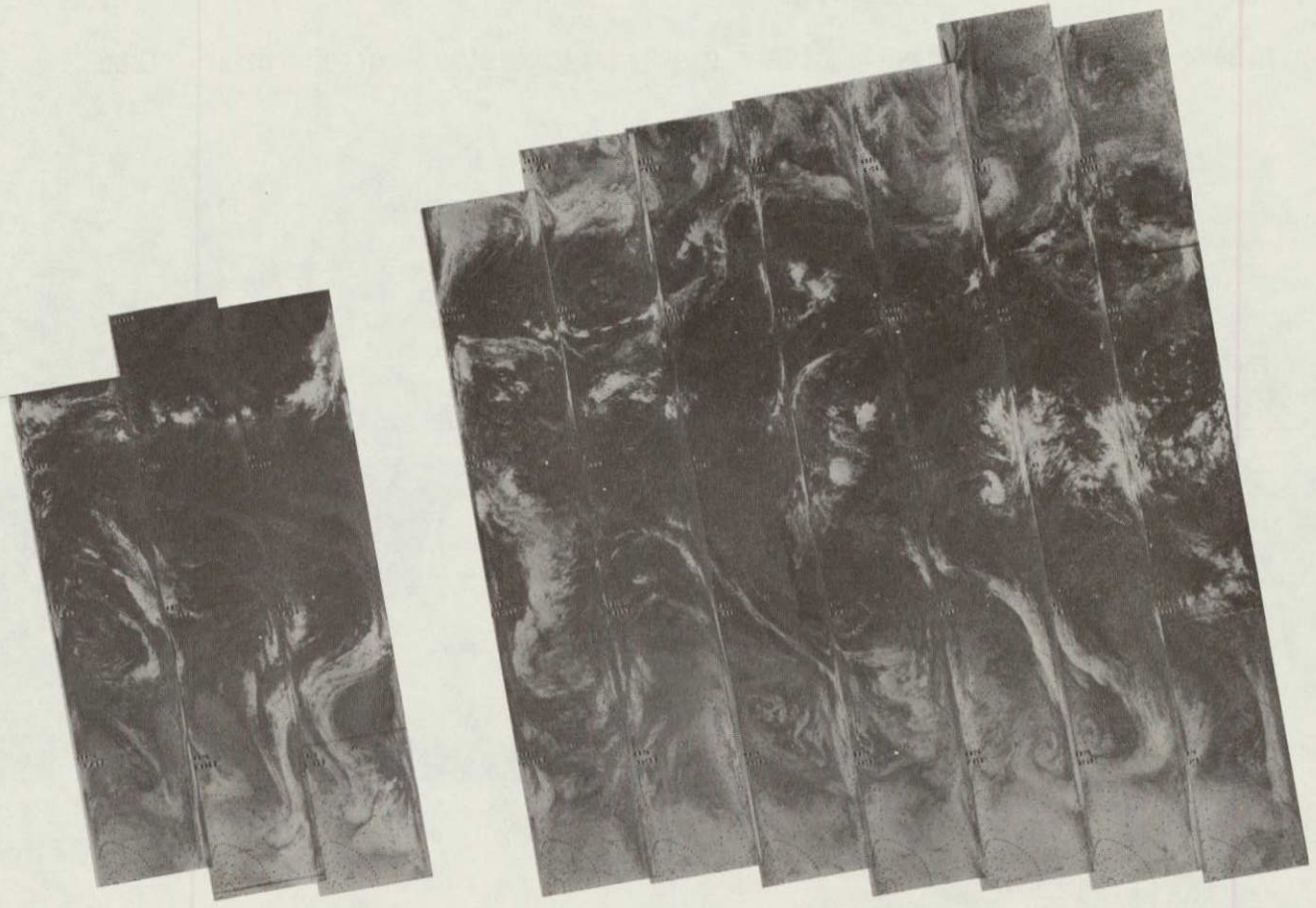
6507 6506 6505 6504 6503 6502 6501 6500 6499 6498 6497 6496 6495

9 OCT 76

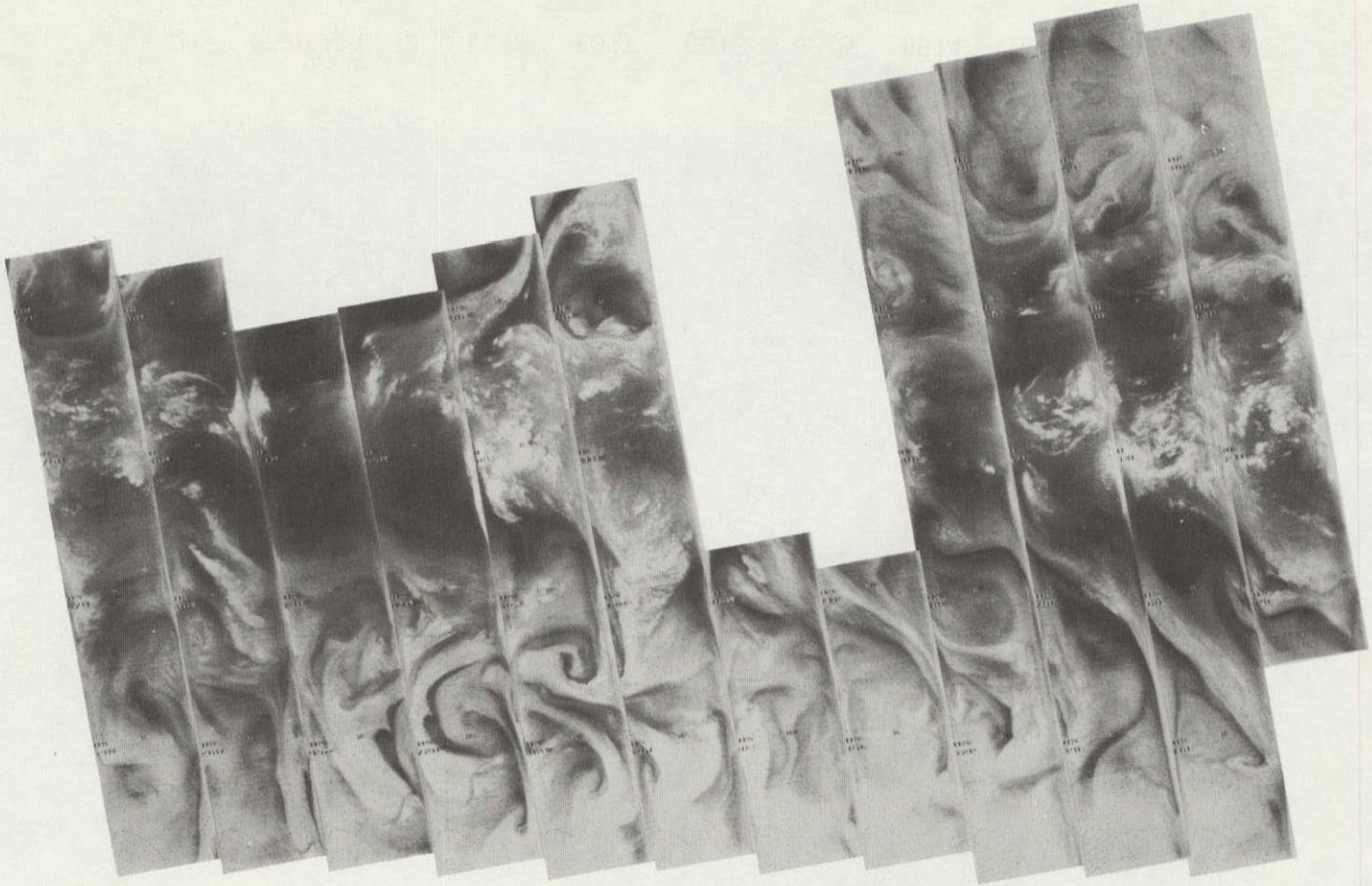
6.7μm



6507 6506 6505 6504 6503 6502 6501 6500 6499 6498 6497 6496 6495

9 OCT 76

11.5μm



6521 6520 6519 6518 6517 6516 6515 6514 6513 6512 6511 6510 6509 6508

10 OCT 76

6.7μm

6521 6520 6519 6518 6517 6516 6515 6514 6513 6512 6511 6510 6509 6508

10 OCT 76

11.5μm

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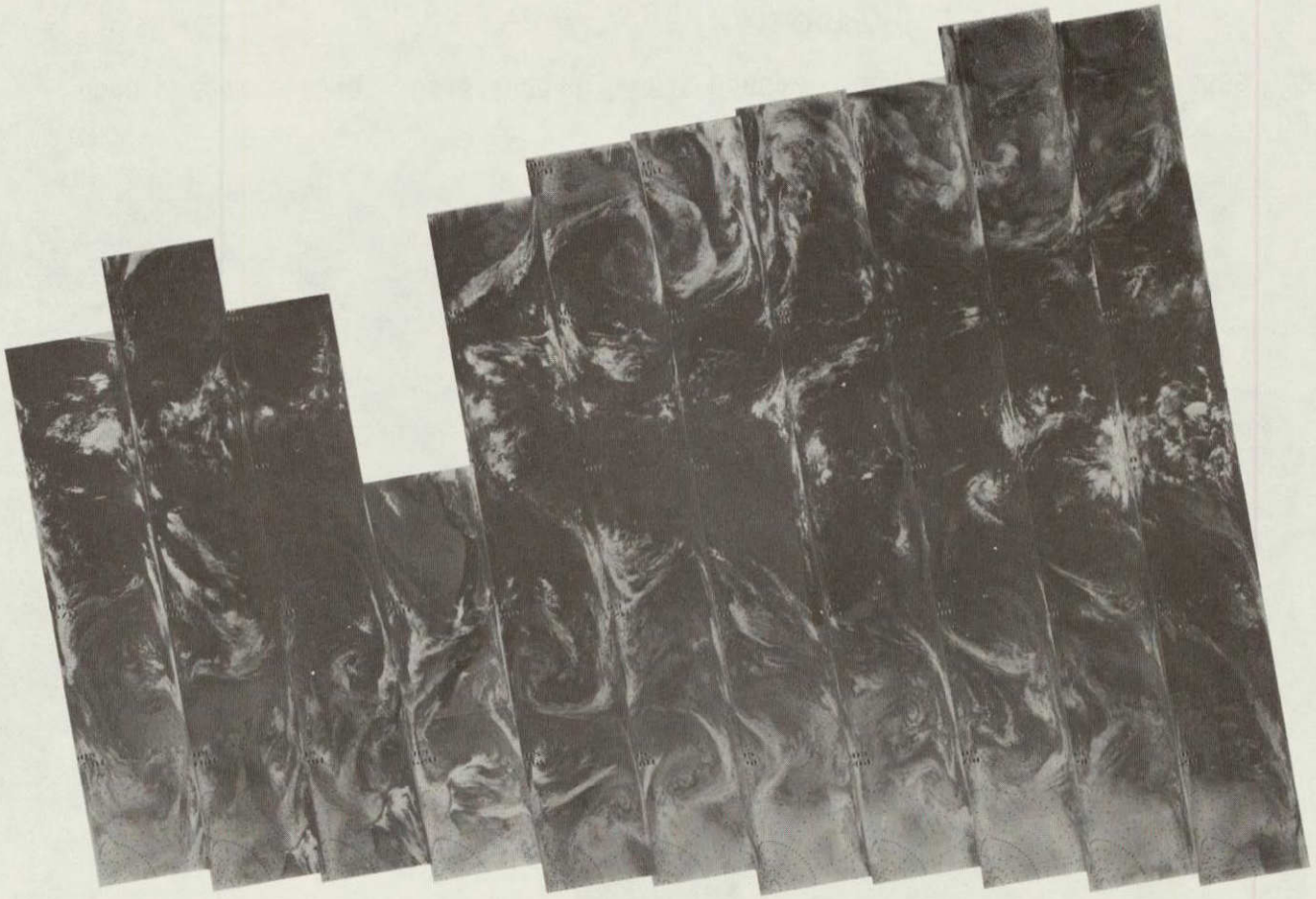
6534 6533 6532 6531 6530 6529 6528 6527 6526 6525 6524 6523 6522

11 OCT 76

6.7μm

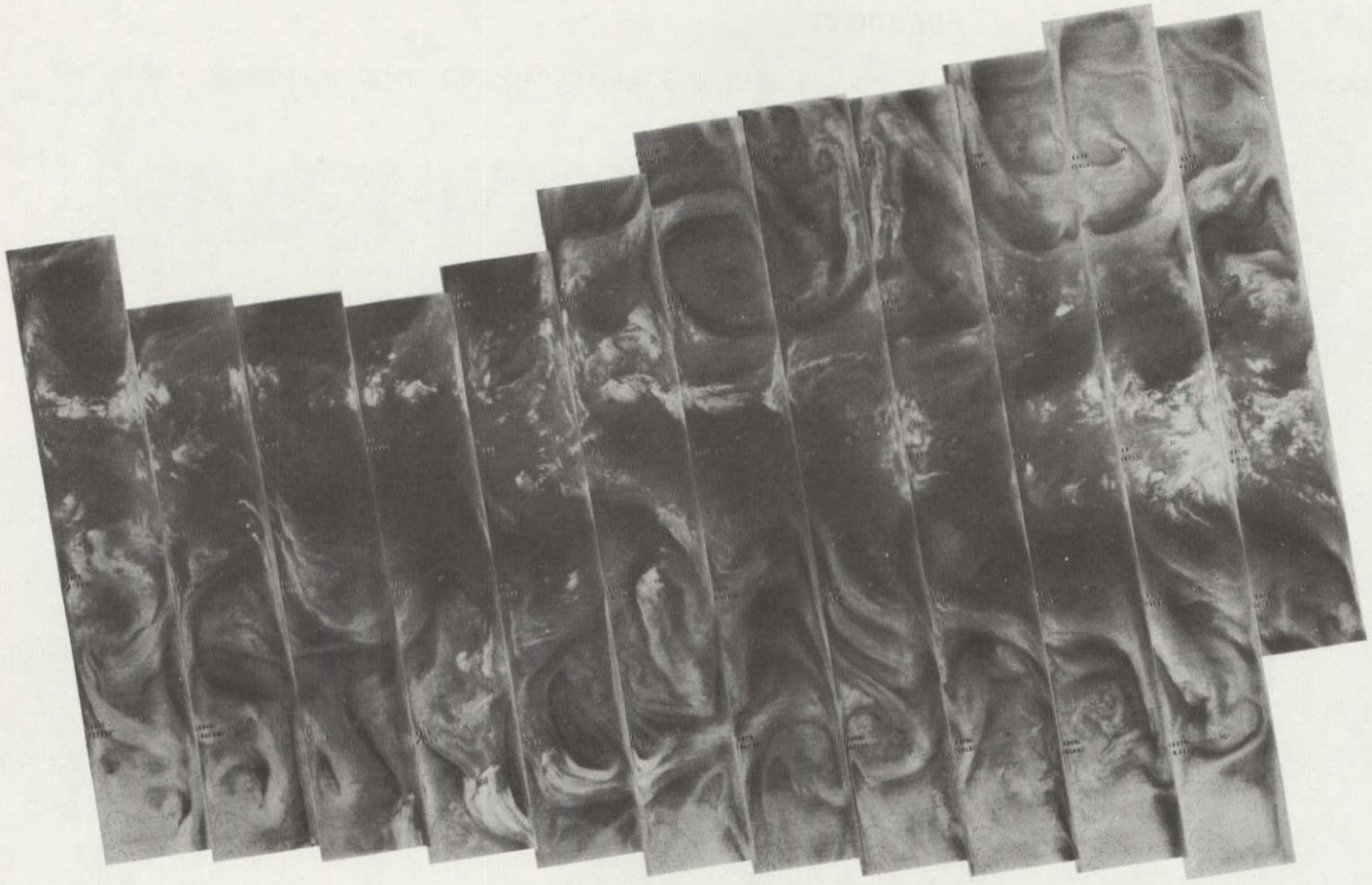
4-200



6534 6533 6532 6531 6530 6529 6528 6527 6526 6525 6524 6523 6522

11 OCT 76

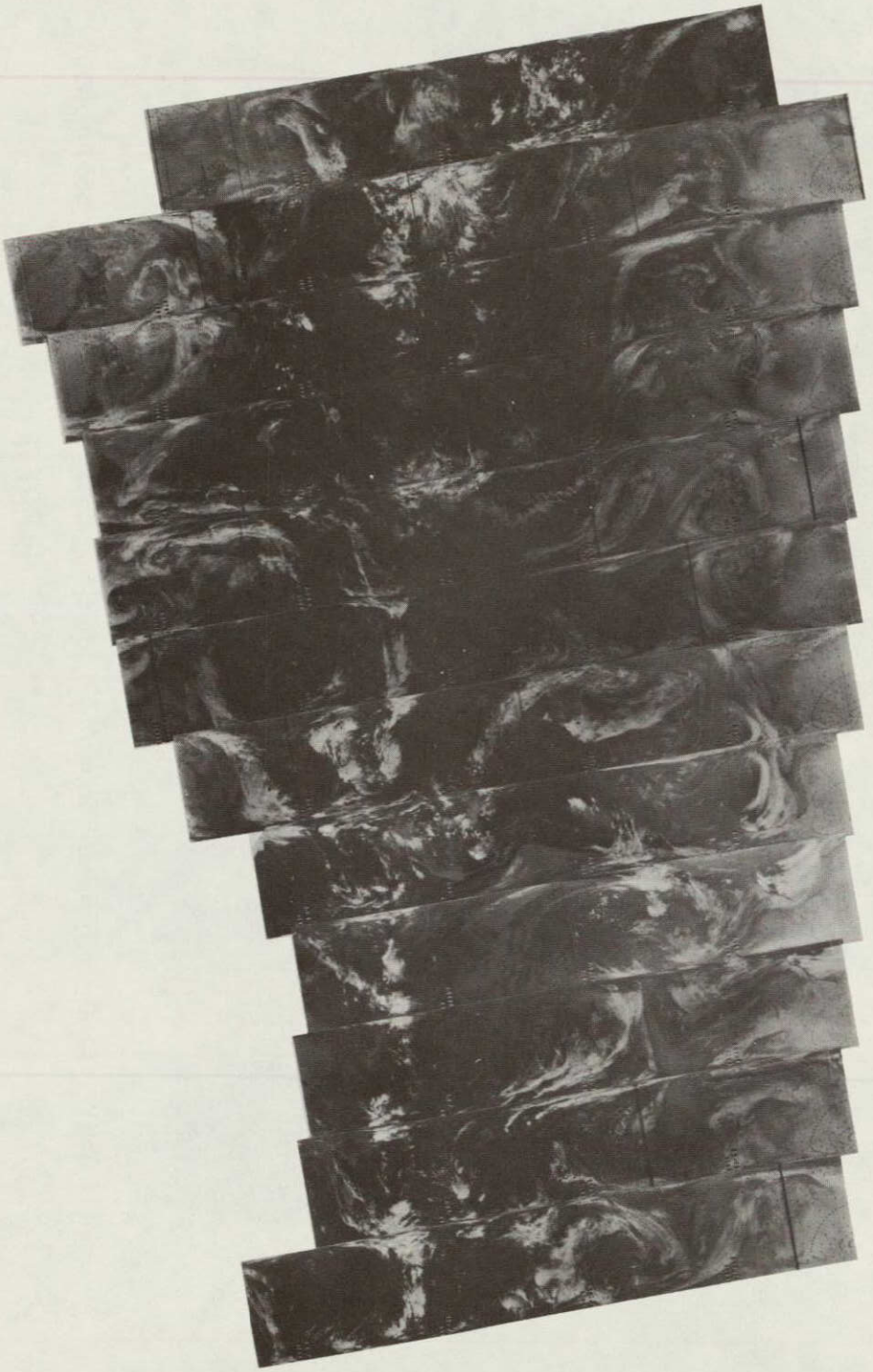
11.5μm



6548 6547 6546 6545 6544 6543 6542 6541 6540 6539 6538 6537 6536 6535

12 OCT 76

6.7μm



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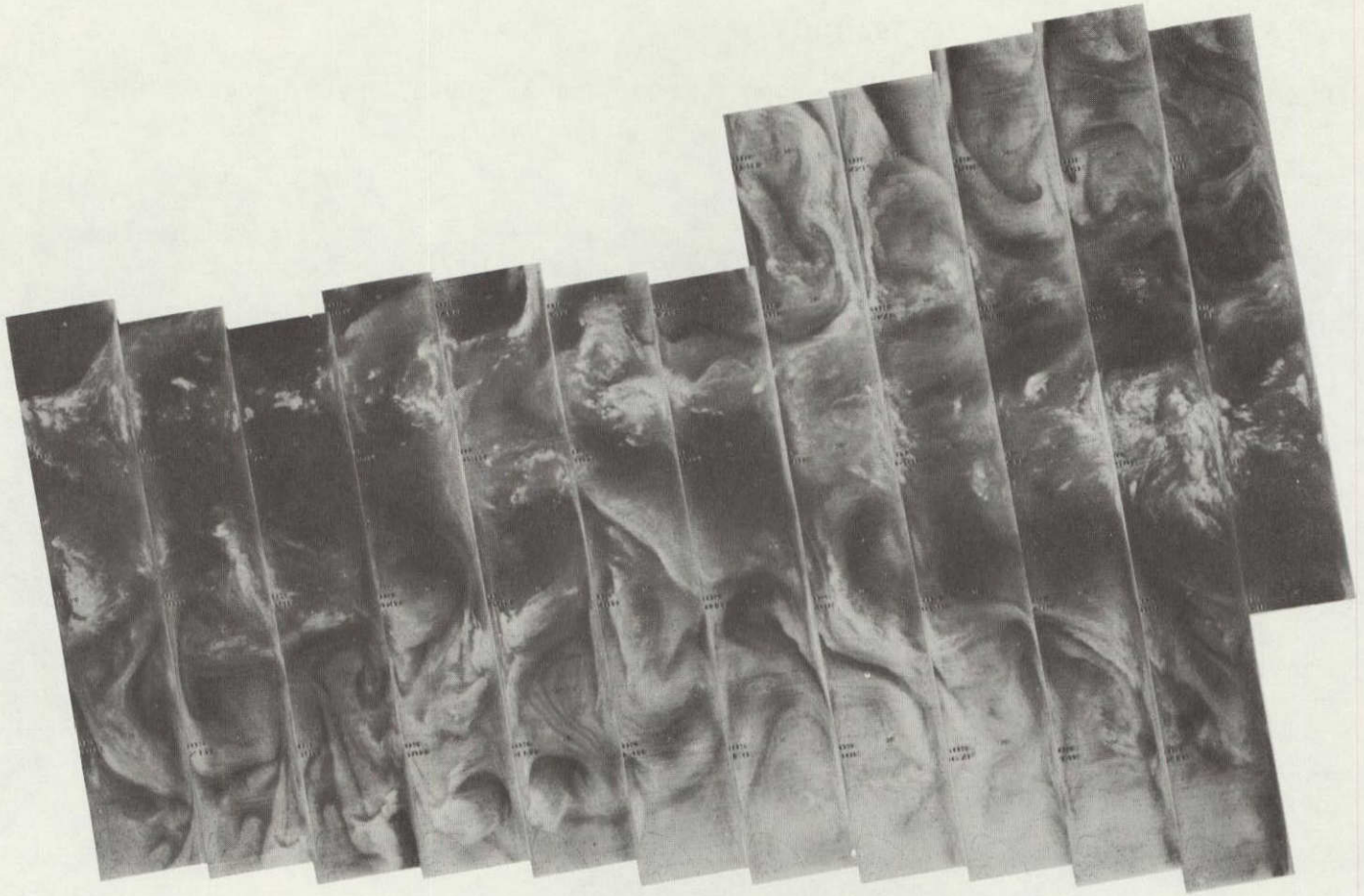
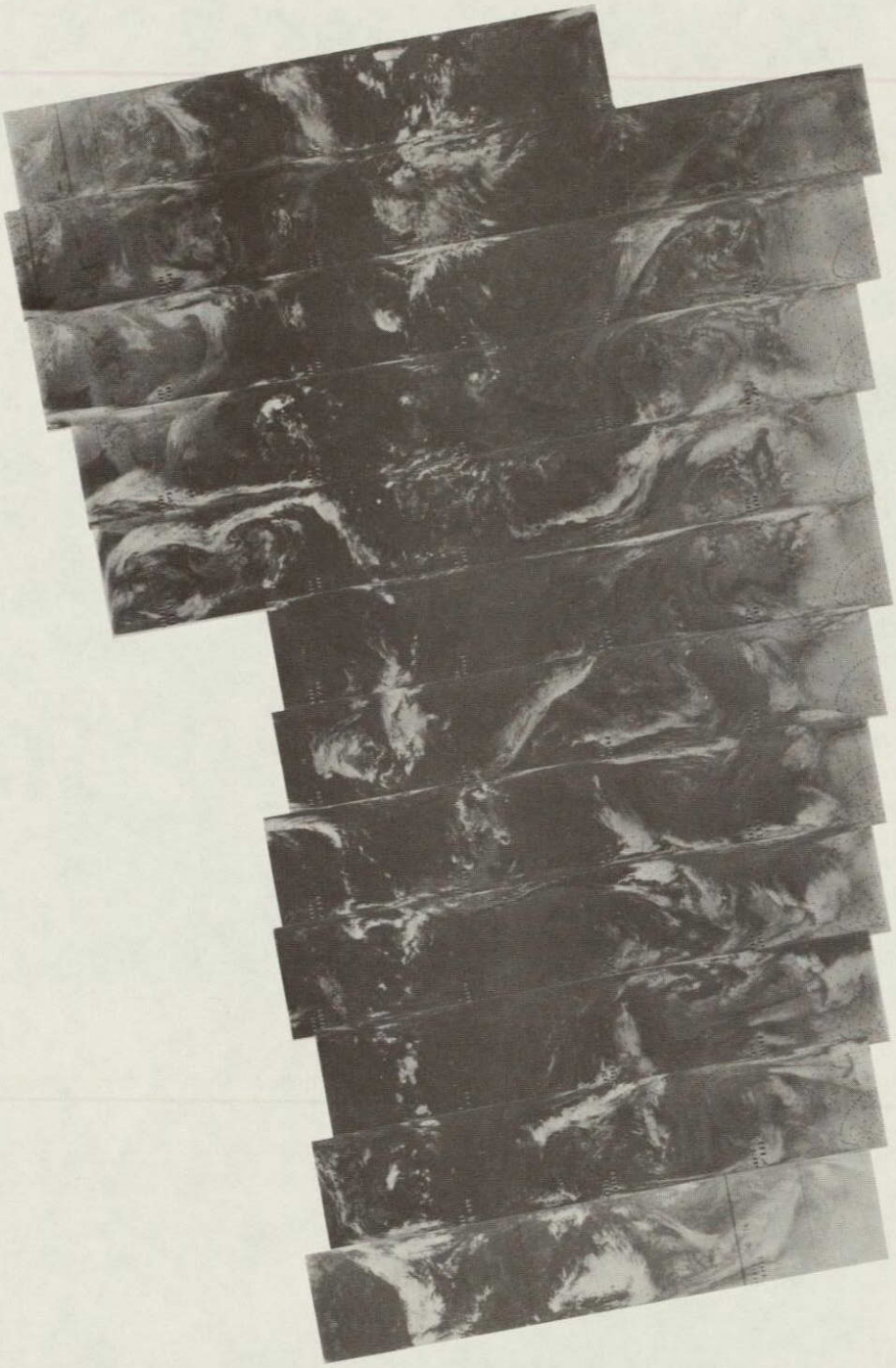


6561 6560 6559 6558 6557 6556 6555 6554 6553 6552 6551 6550 6549

13 OCT 76

6.7μm



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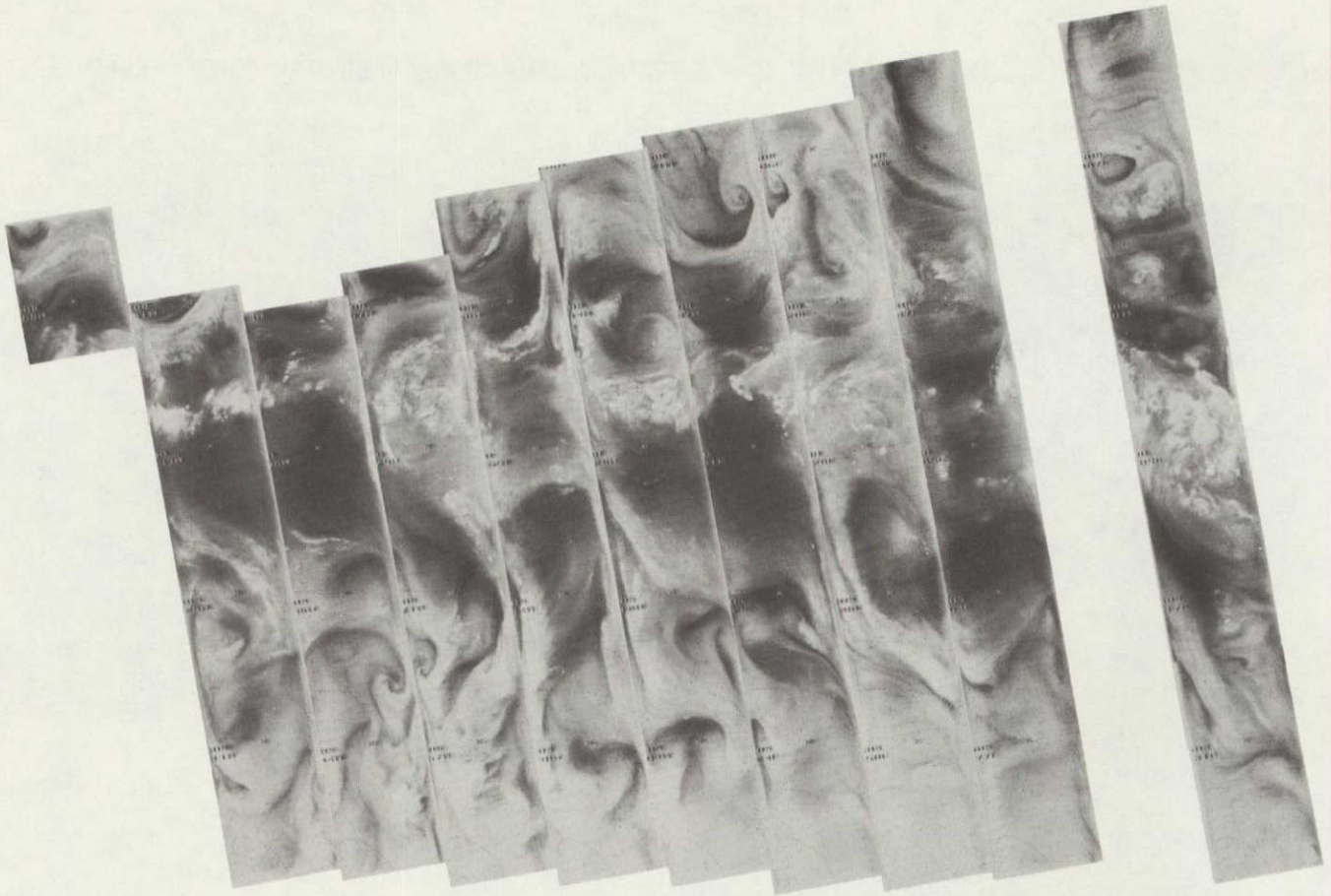
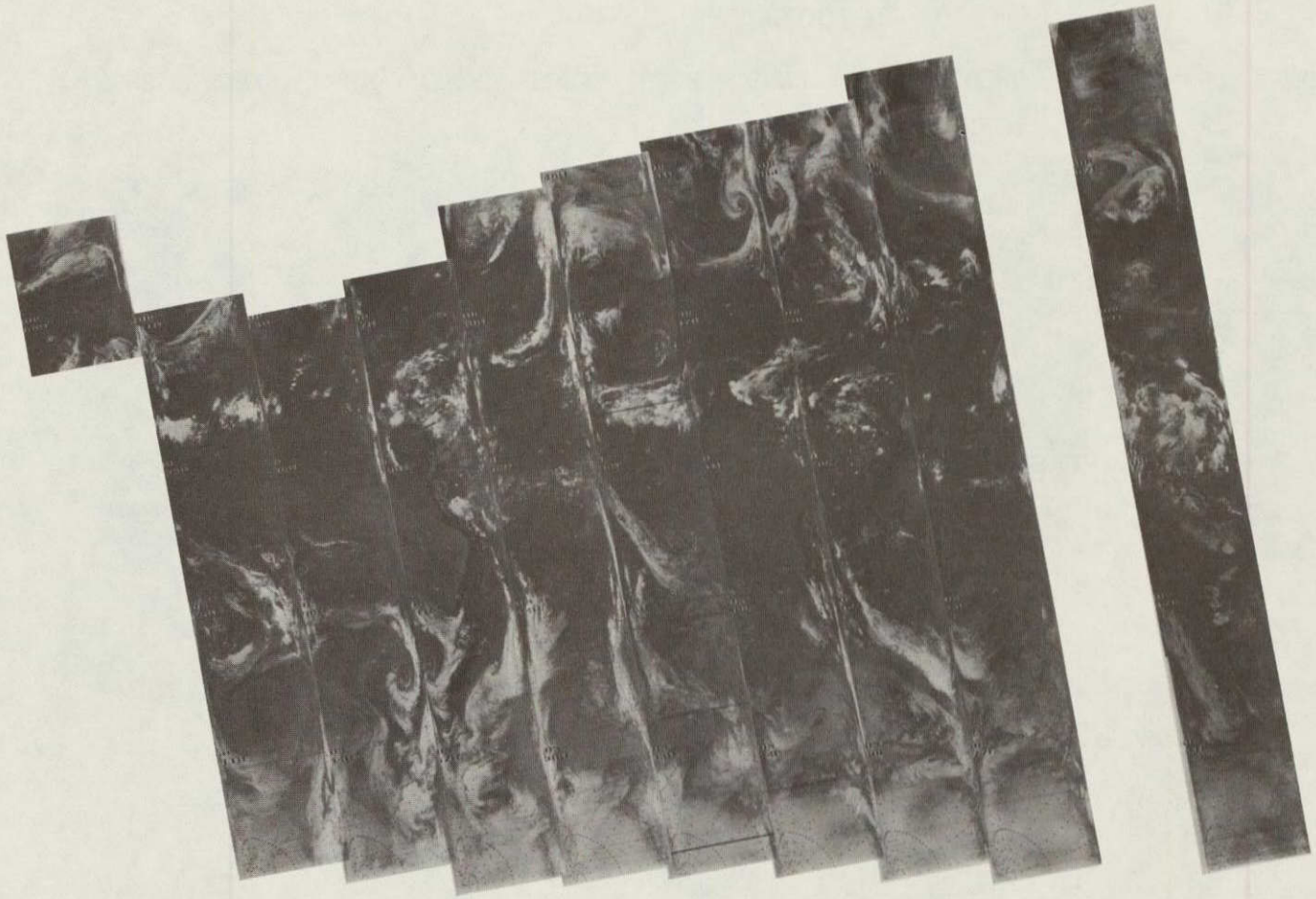


6574 6573 6572 6571 6570 6569 6568 6567 6566 6565 6564 6563 6562

14 OCT 76

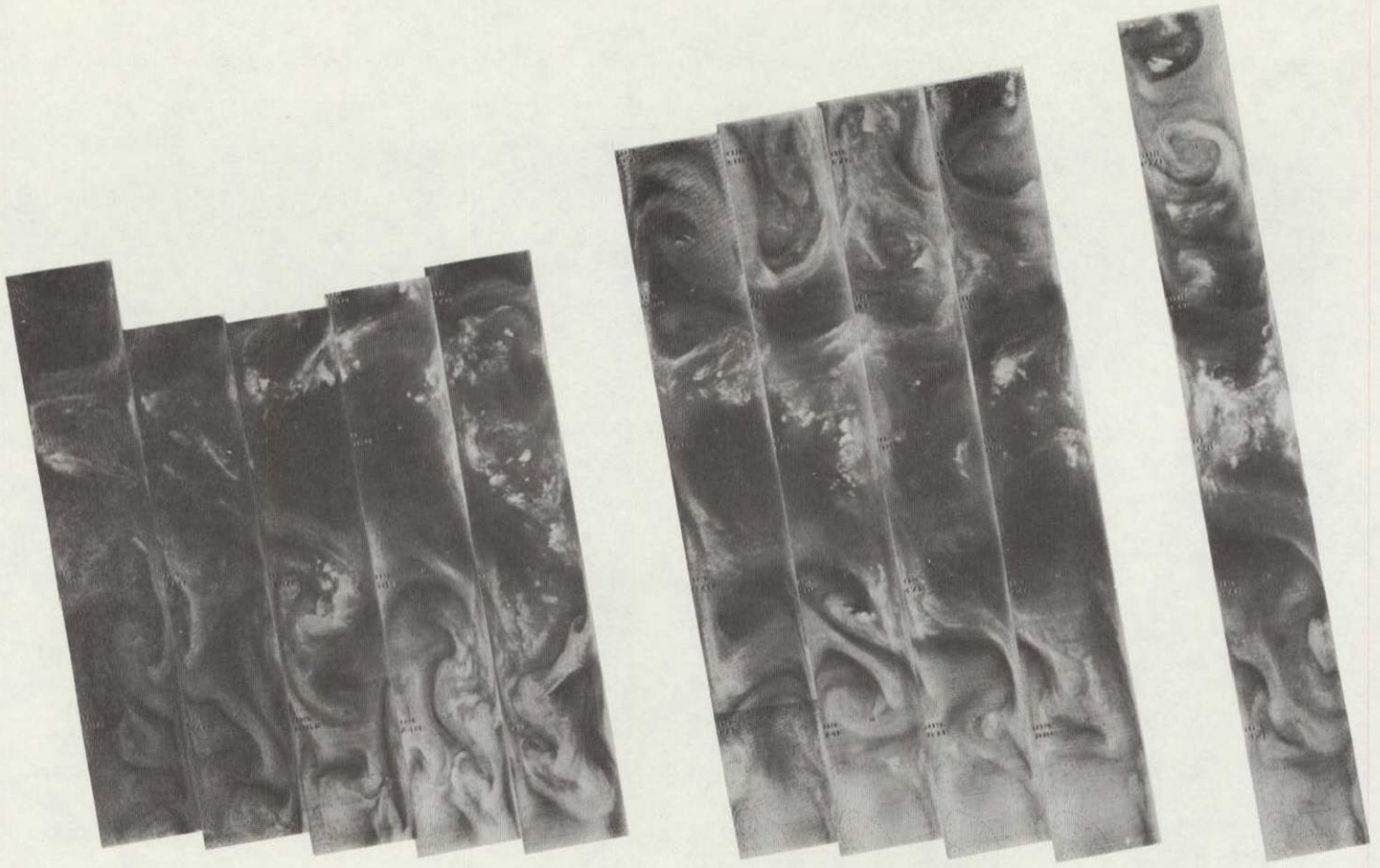
6.7μm



6574 6573 6572 6571 6570 6569 6568 6567 6566 6565 6564 6563 6562

14 OCT 76

11.5μm



6588 6587 6586 6585 6584 6583 6582 6581 6580 6579 6578 6577 6576 6575

15 OCT 76

6.7μm

6588 6587 6586 6585 6584 6583 6582 6581 6580 6579 6578 6577 6576 6575

15 OCT 76

11.5μm

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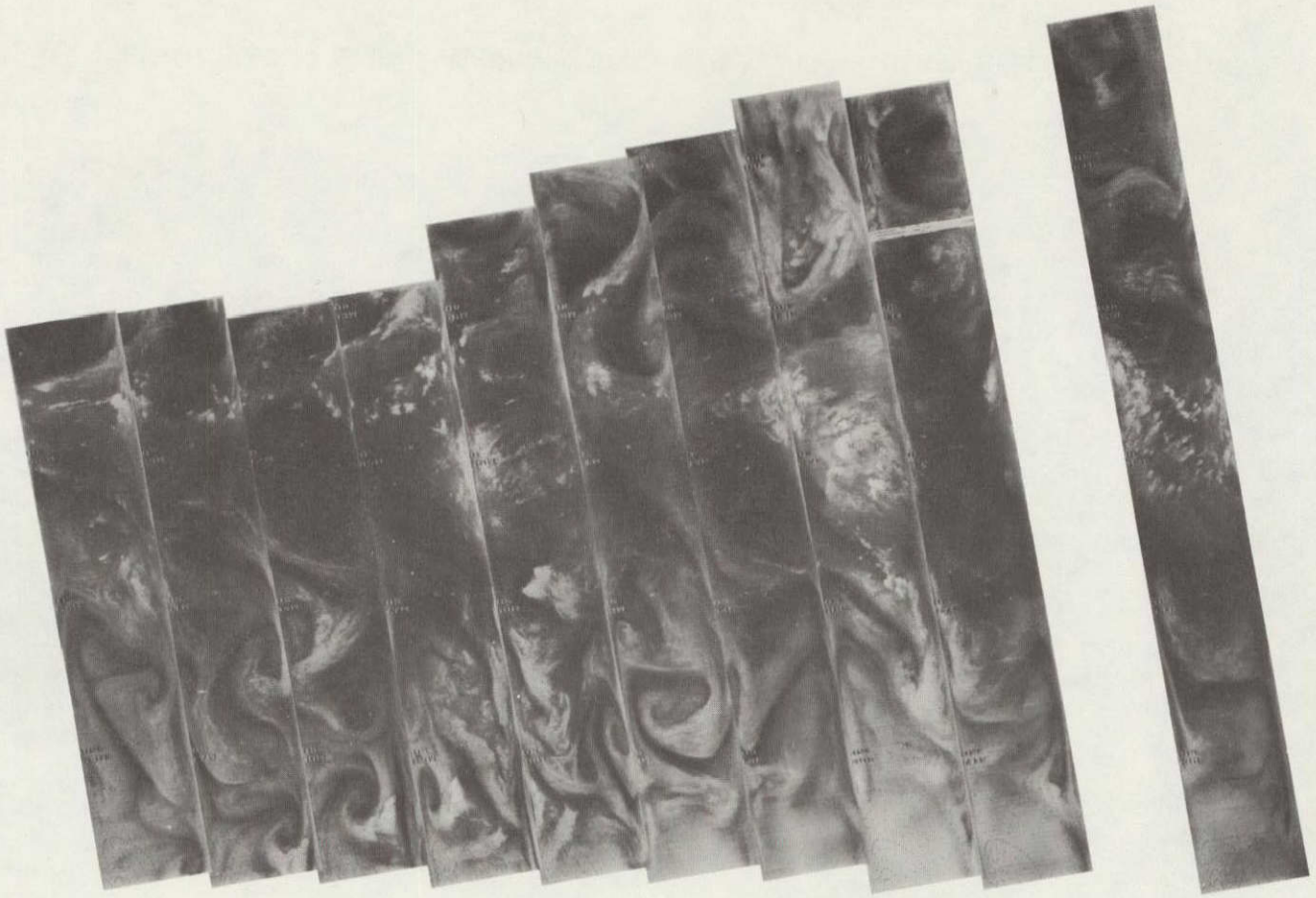


6601 6600 6599 6598 6597 6596 6595 6594 6593 6592 6591 6590 6589

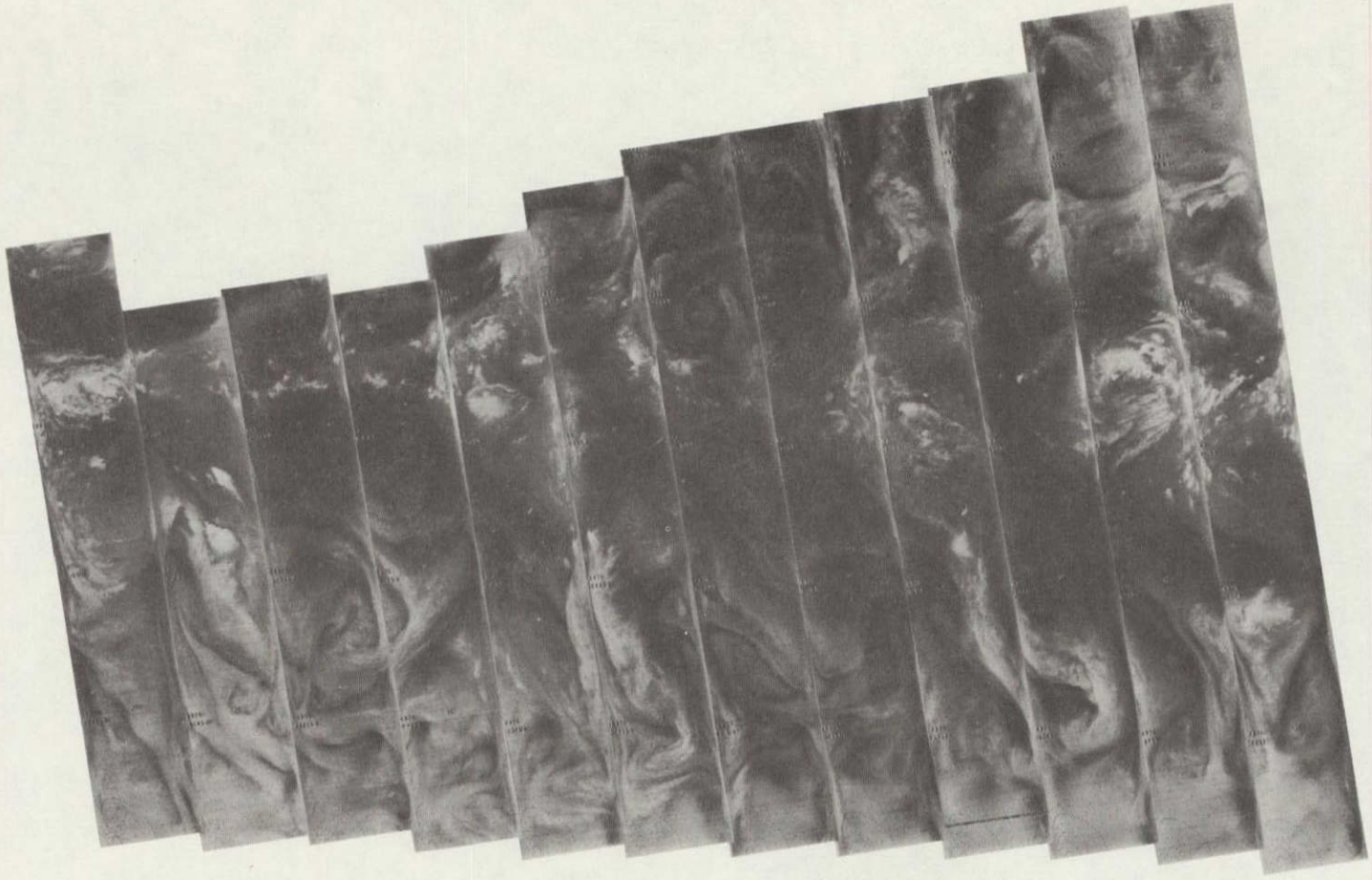
16 OCT 76

6.7μm

6601 6600 6599 6598 6597 6596 6595 6594 6593 6592 6591 6590 6589

16 OCT 76

11.5μm



6615 6614 6613 6612 6611 6610 6609 6608 6607 6606 6605 6604 6603 6602

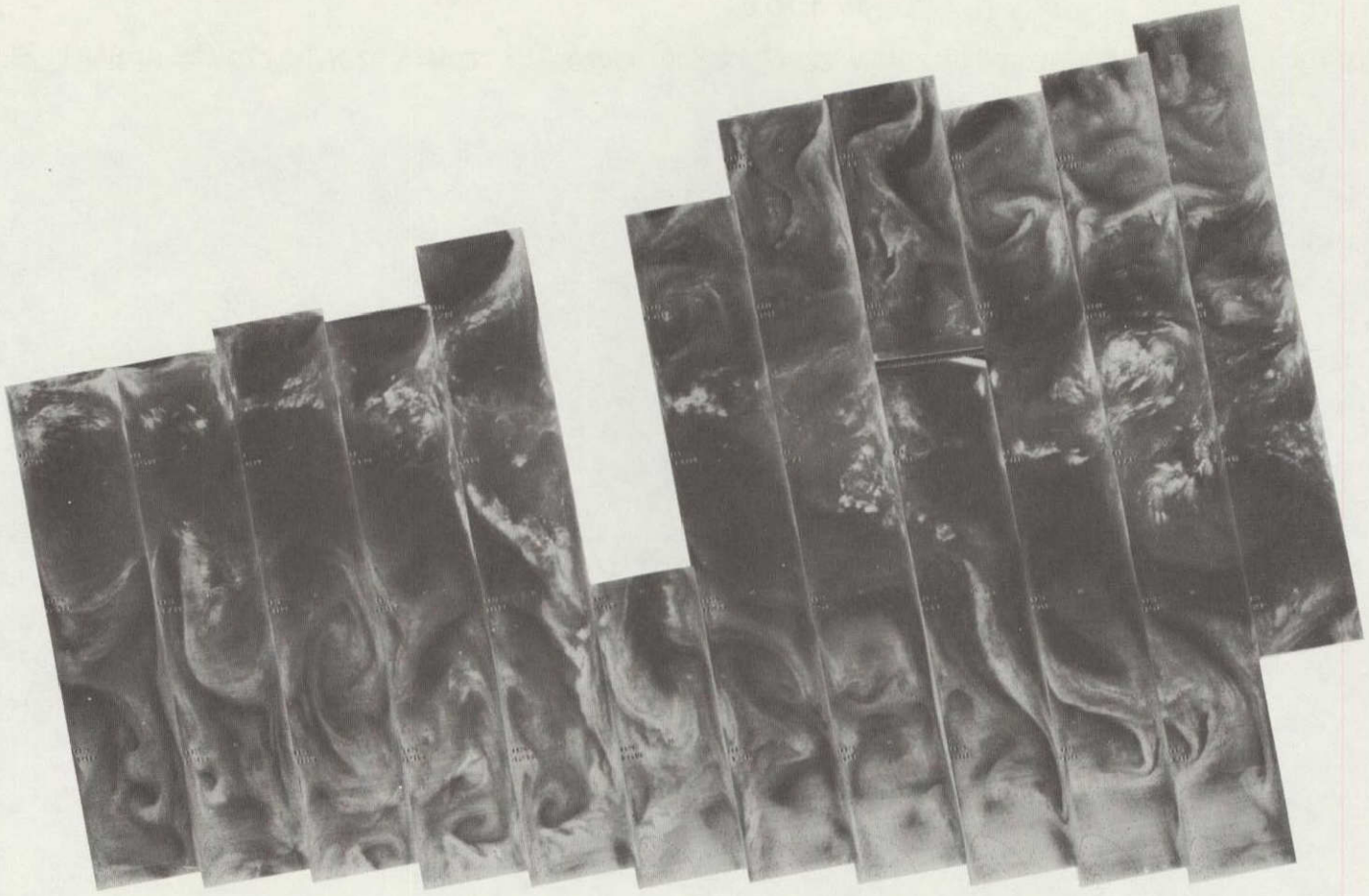
17 OCT 76

6.7μm

6615 6614 6613 6612 6611 6610 6609 6608 6607 6606 6605 6604 6603 6602

17 OCT 76

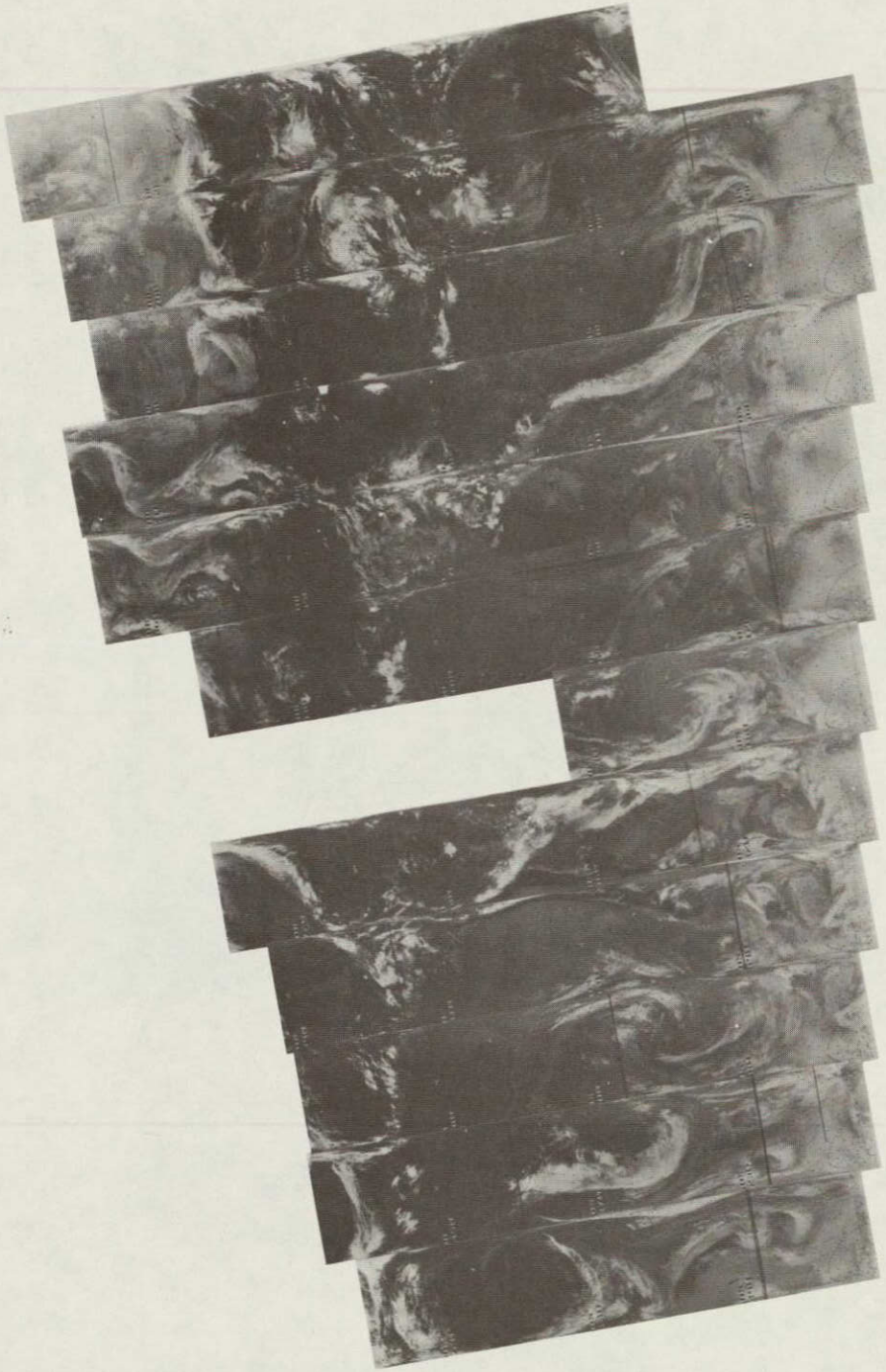
11.5μm



6628 6627 6626 6625 6624 6623 6622 6621 6620 6619 6618 6617 6616

18 OCT 76

6.7μm



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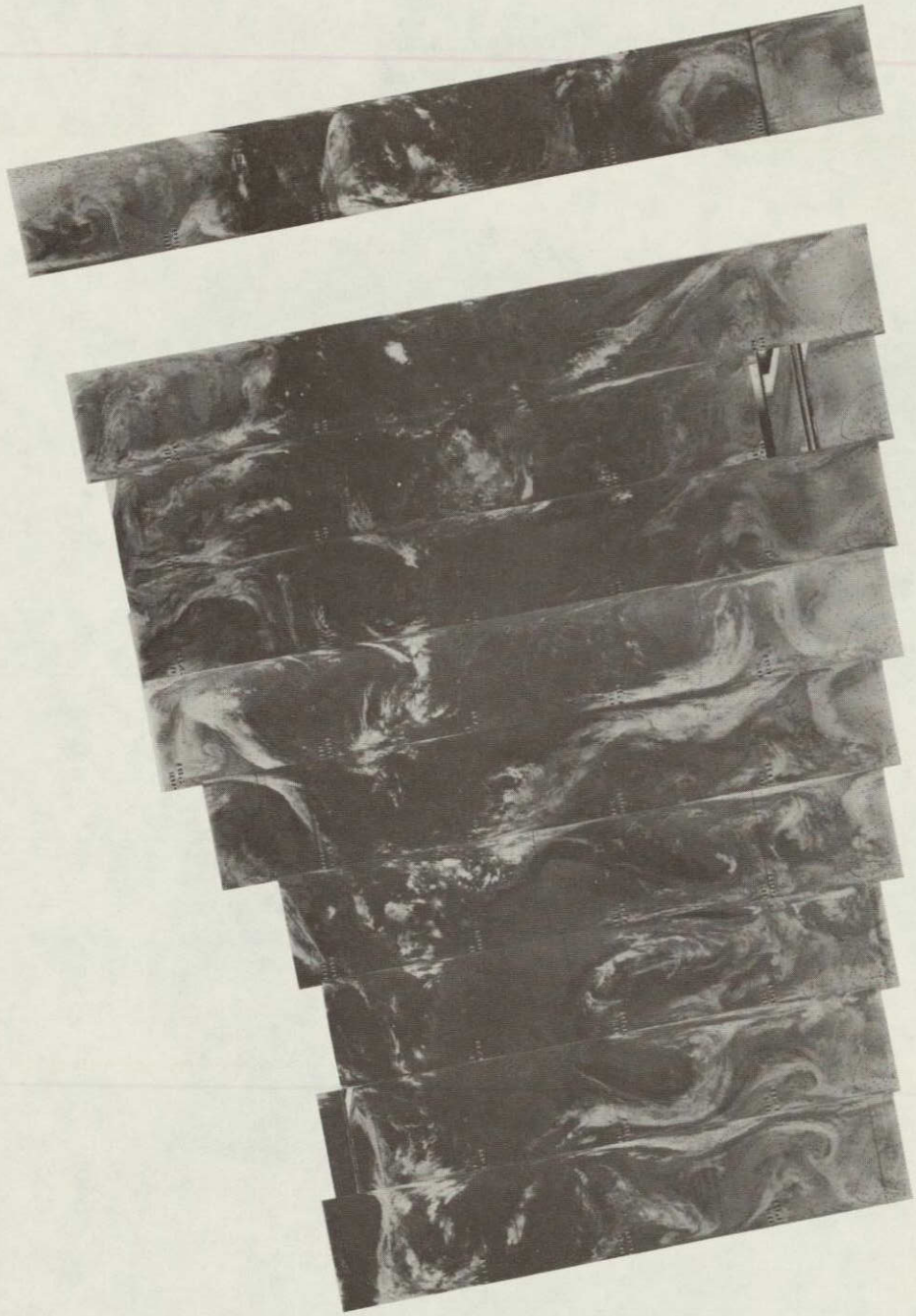
6641 6640 6639 6638 6637 6636 6635 6634 6633 6632 6631 6630 6629

19 OCT 76

6.7μm



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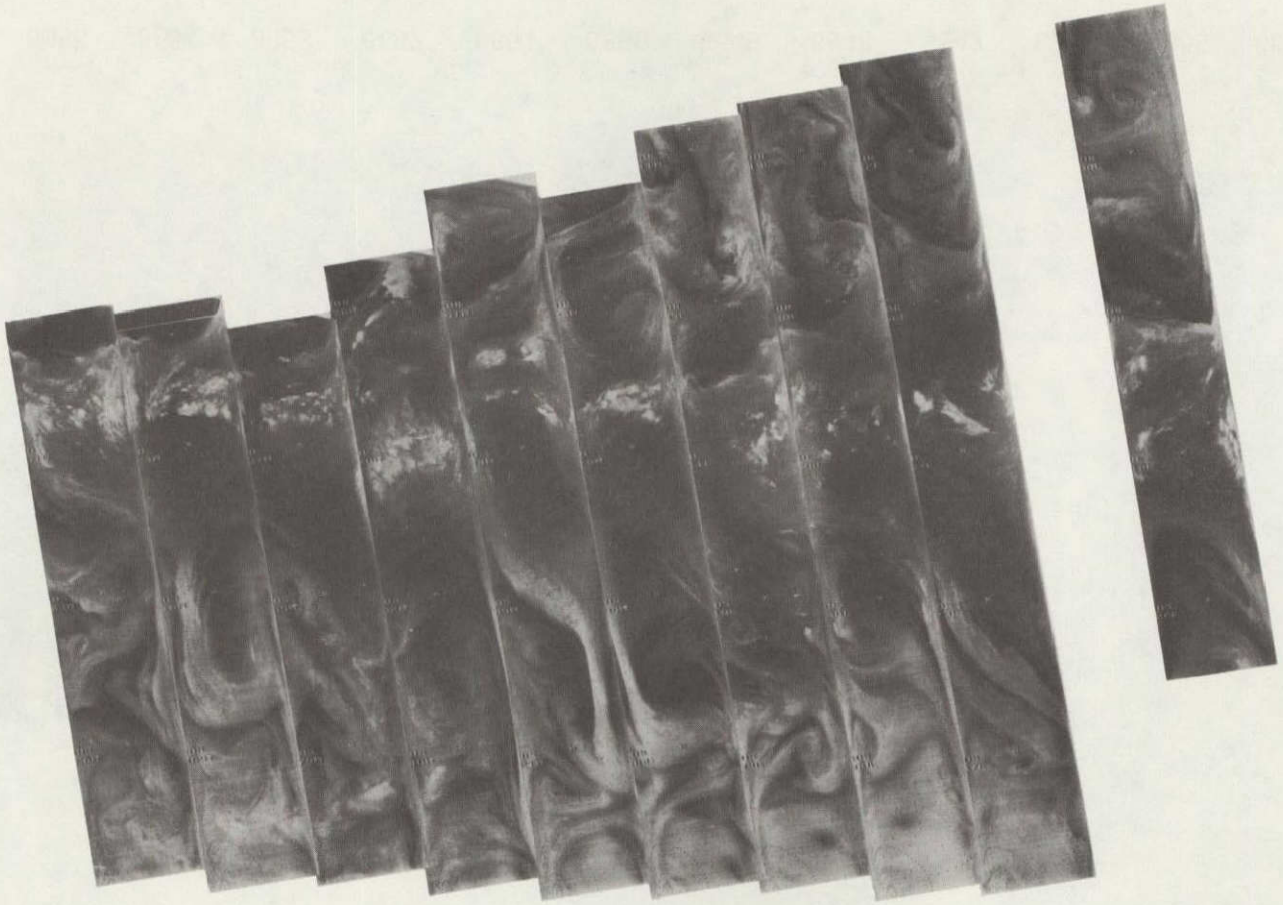

6655 6654 6653 6652 6651 6650 6649 6648 6647 6646 6645 6644 6643 6642

20 OCT 76

6.7μm

6655 6654 6653 6652 6651 6650 6649 6648 6647 6646 6645 6644 6643 6642

20 OCT 76

11.5μm

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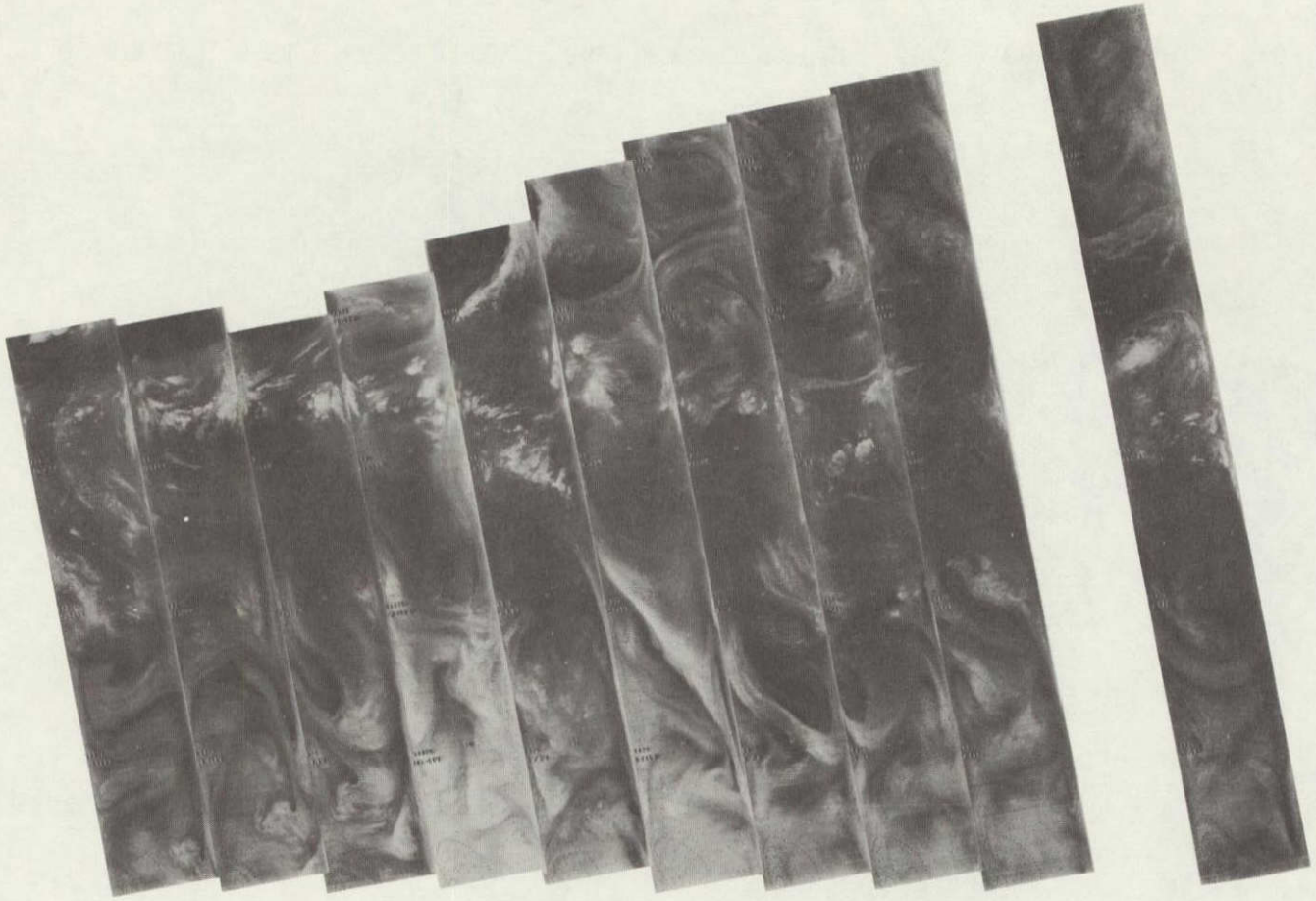
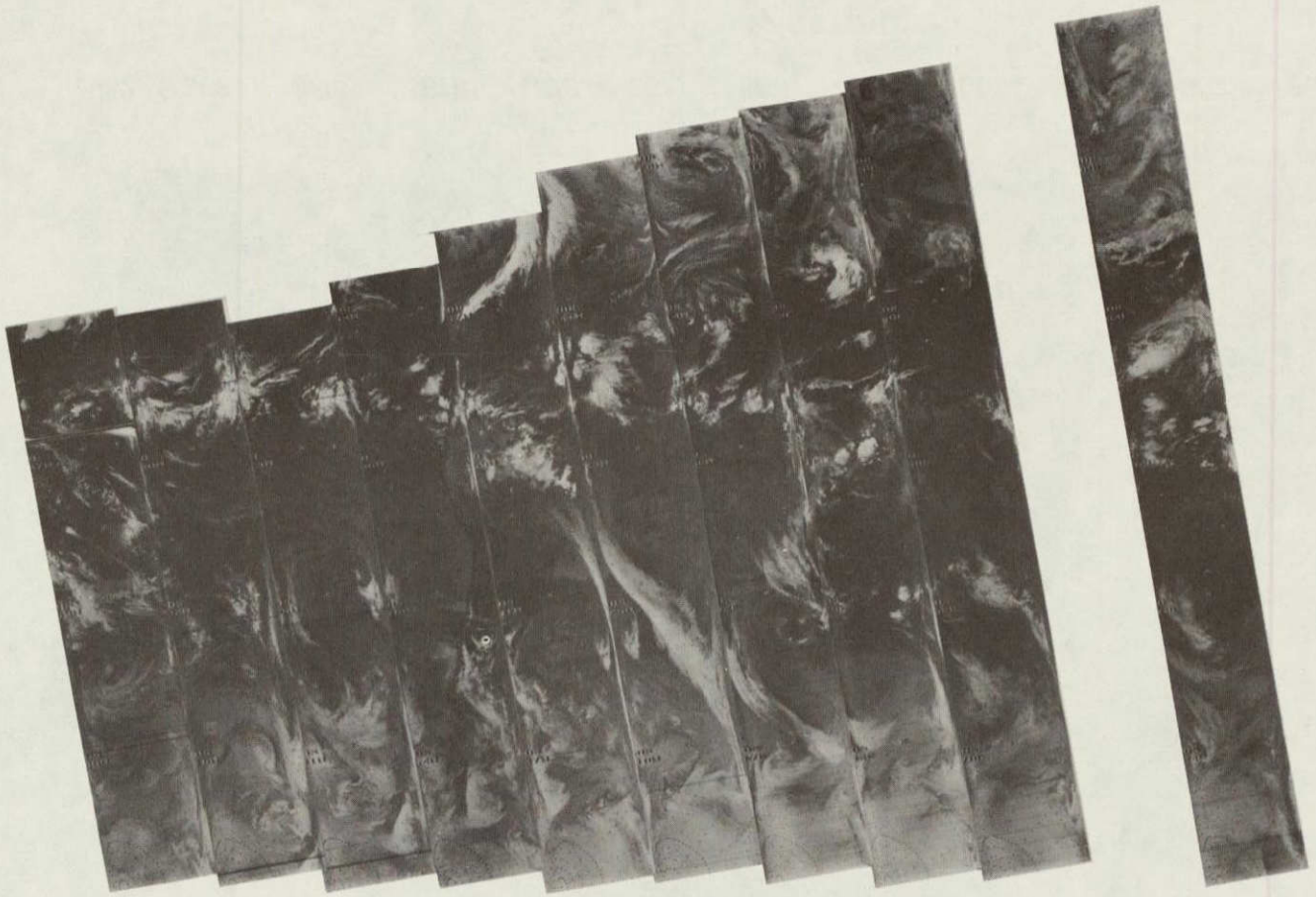


6668 6667 6666 6665 6664 6663 6662 6661 6660 6659 6658 6657 6656

21 OCT 76

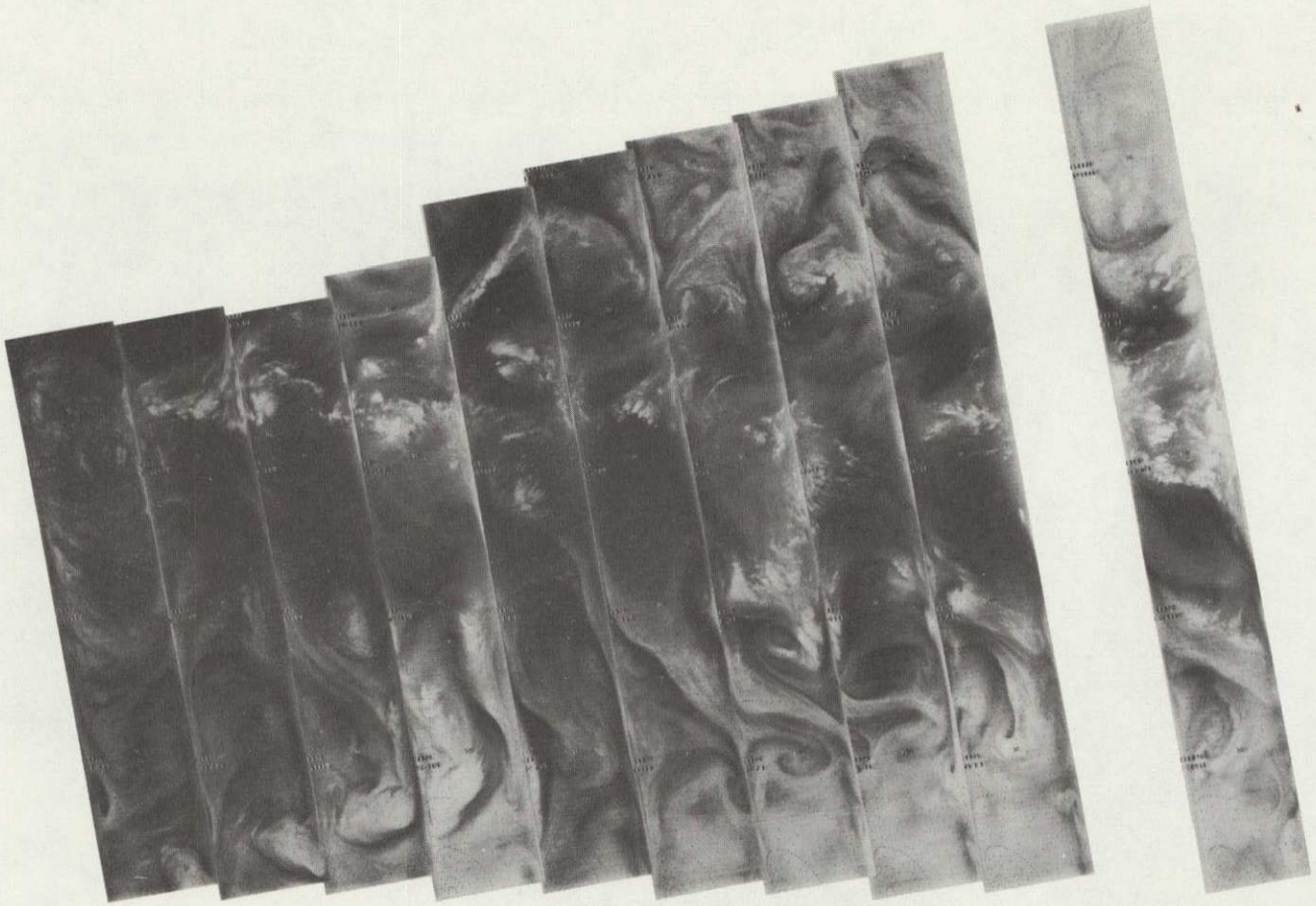
6.7μm



6668 6667 6666 6665 6664 6663 6662 6661 6660 6659 6658 6657 6656

21 OCT 76

11.5μm



6682 6681 6680 6679 6678 6677 6676 6675 6674 6673 6672 6671 6670 6669

22 OCT 76

6.7μm

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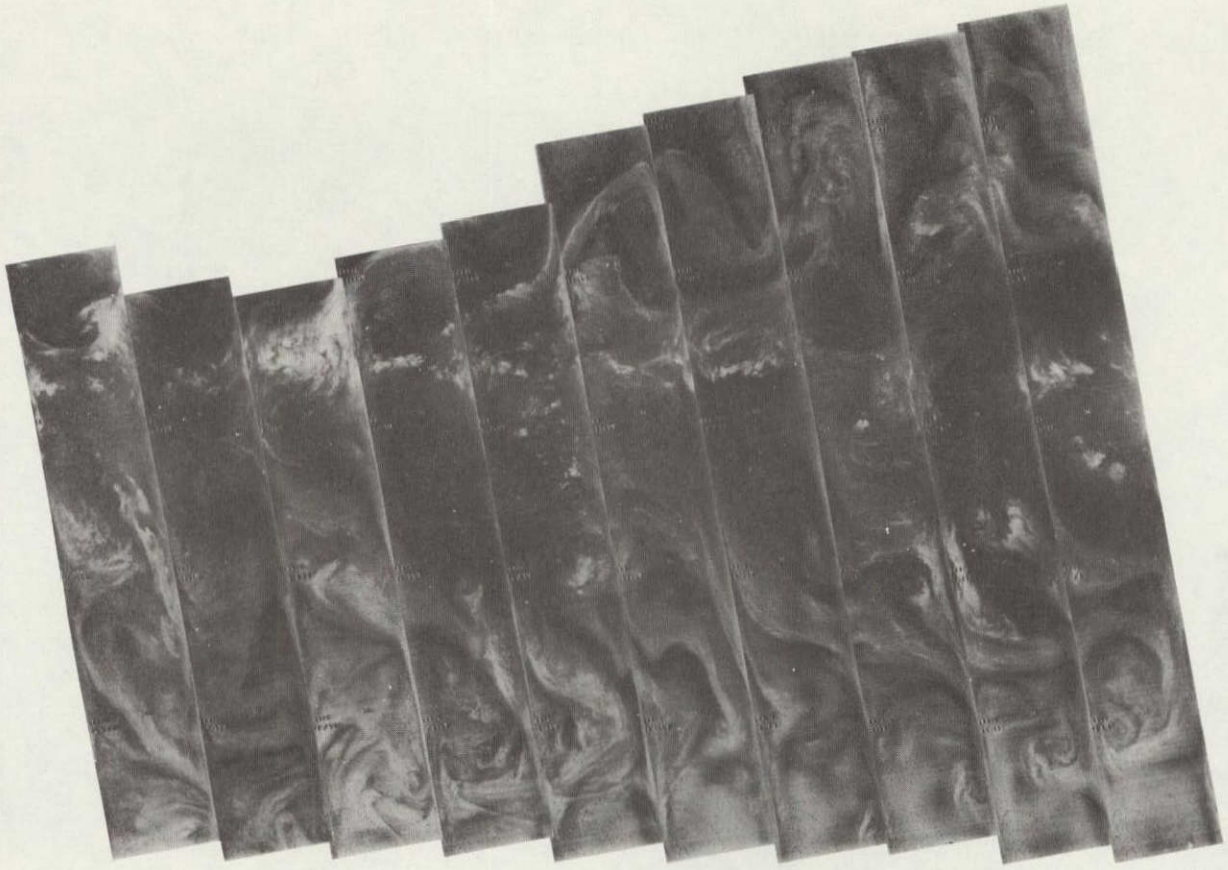
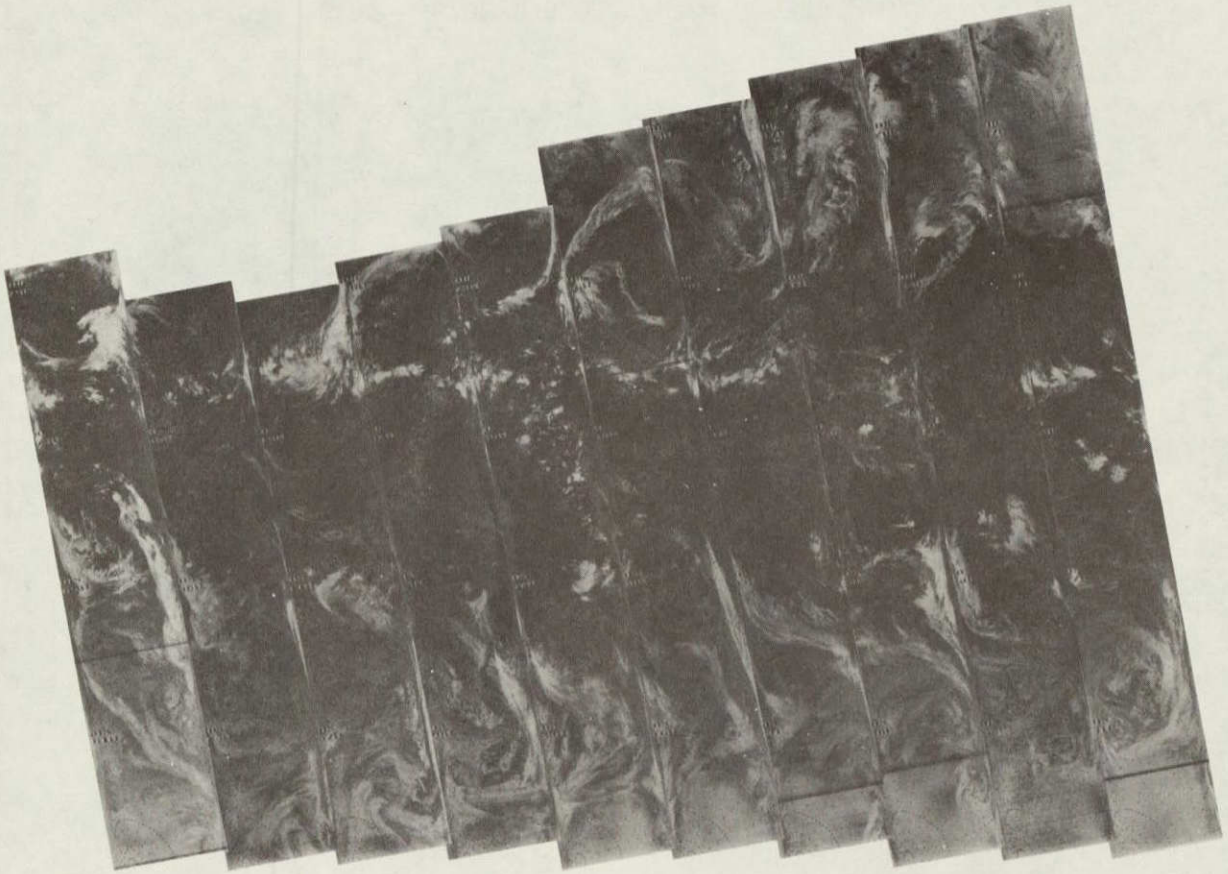


6695 6694 6693 6692 6691 6690 6689 6688 6687 6686 6685 6684 6683

23 OCT 76

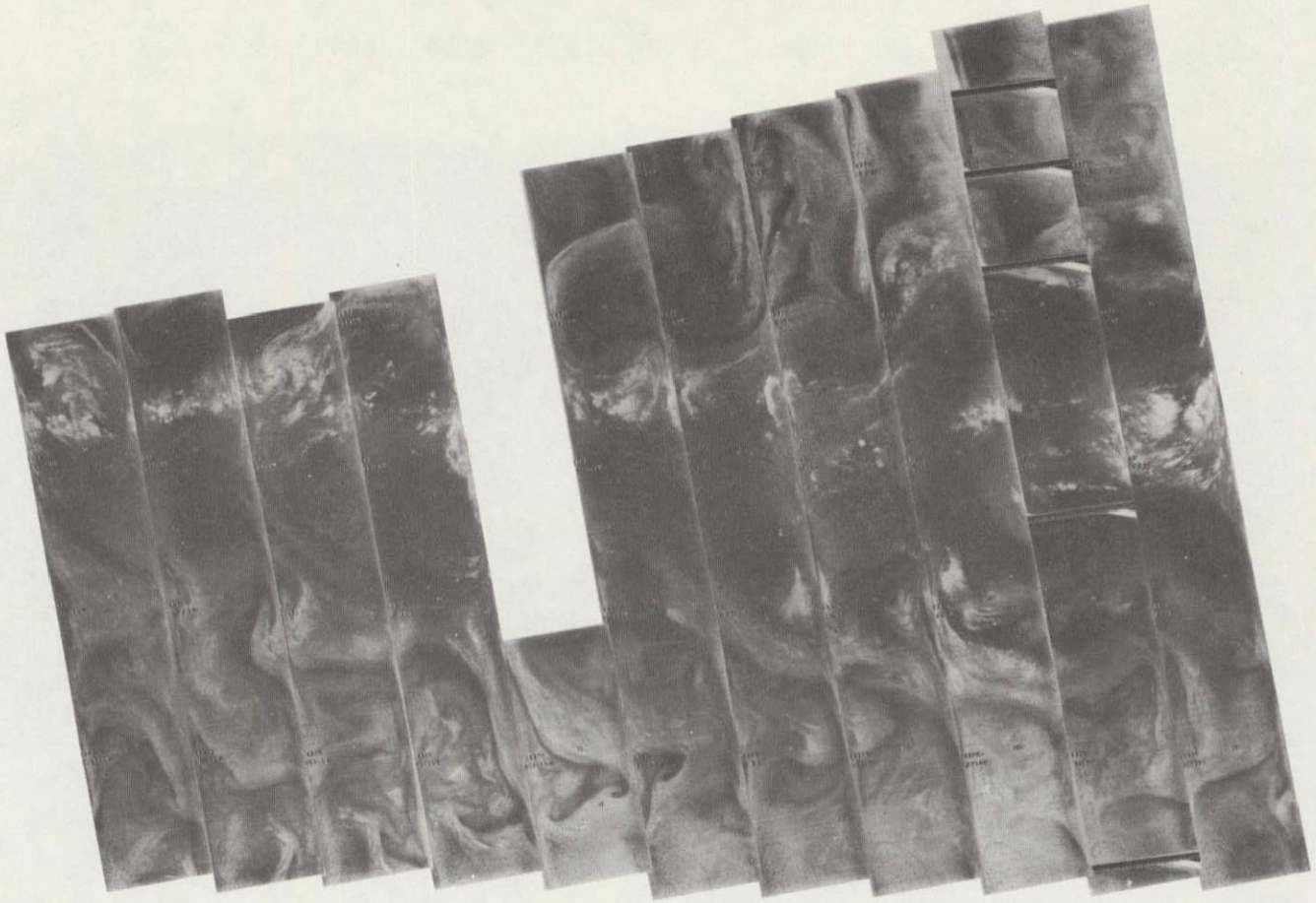
6.7μm



6695 6694 6693 6692 6691 6690 6689 6688 6687 6686 6685 6684 6683

23 OCT 76

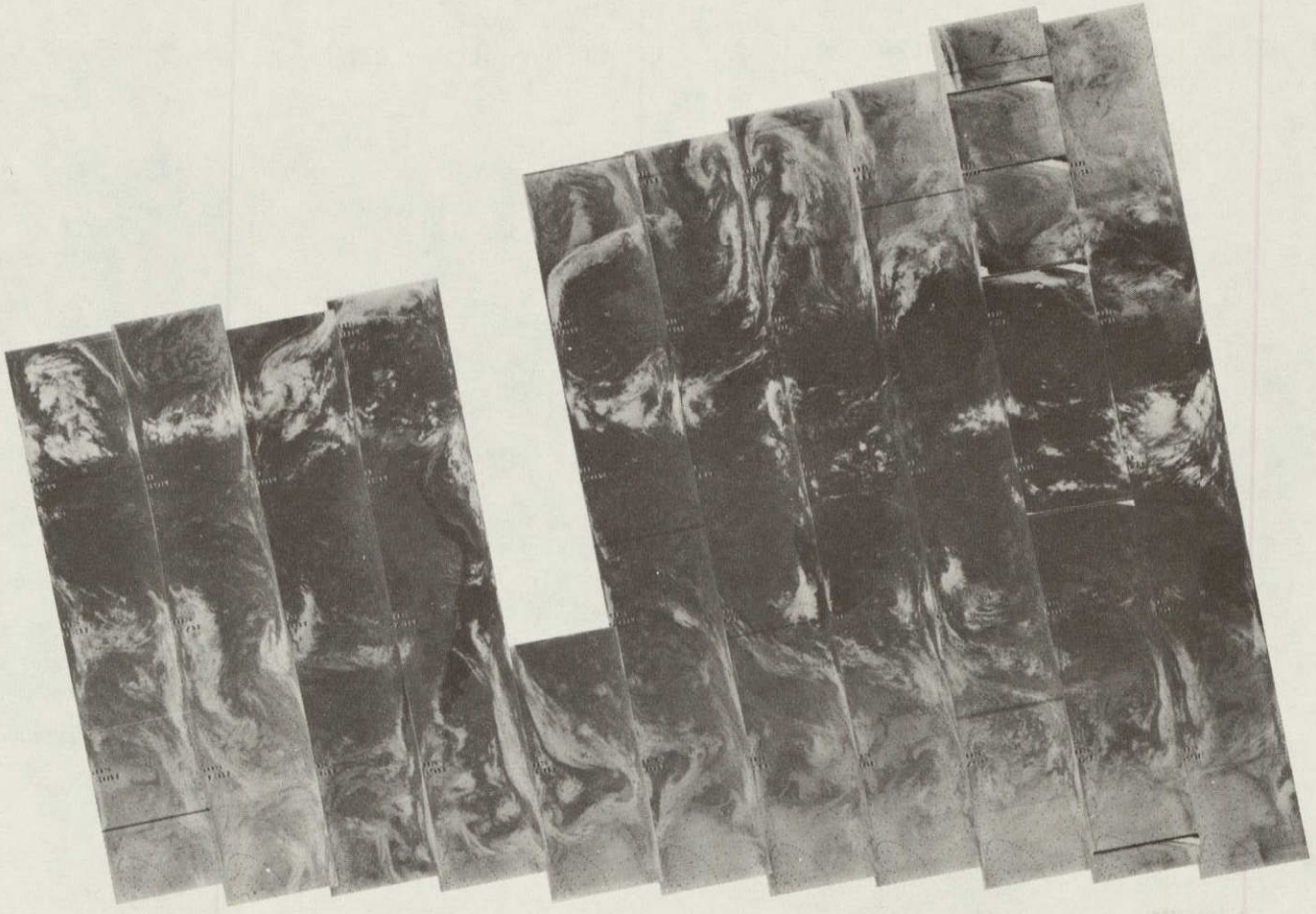
11.5μm



6708 6707 6706 6705 6704 6703 6702 6701 6700 6699 6698 6697 6696

24 OCT 76

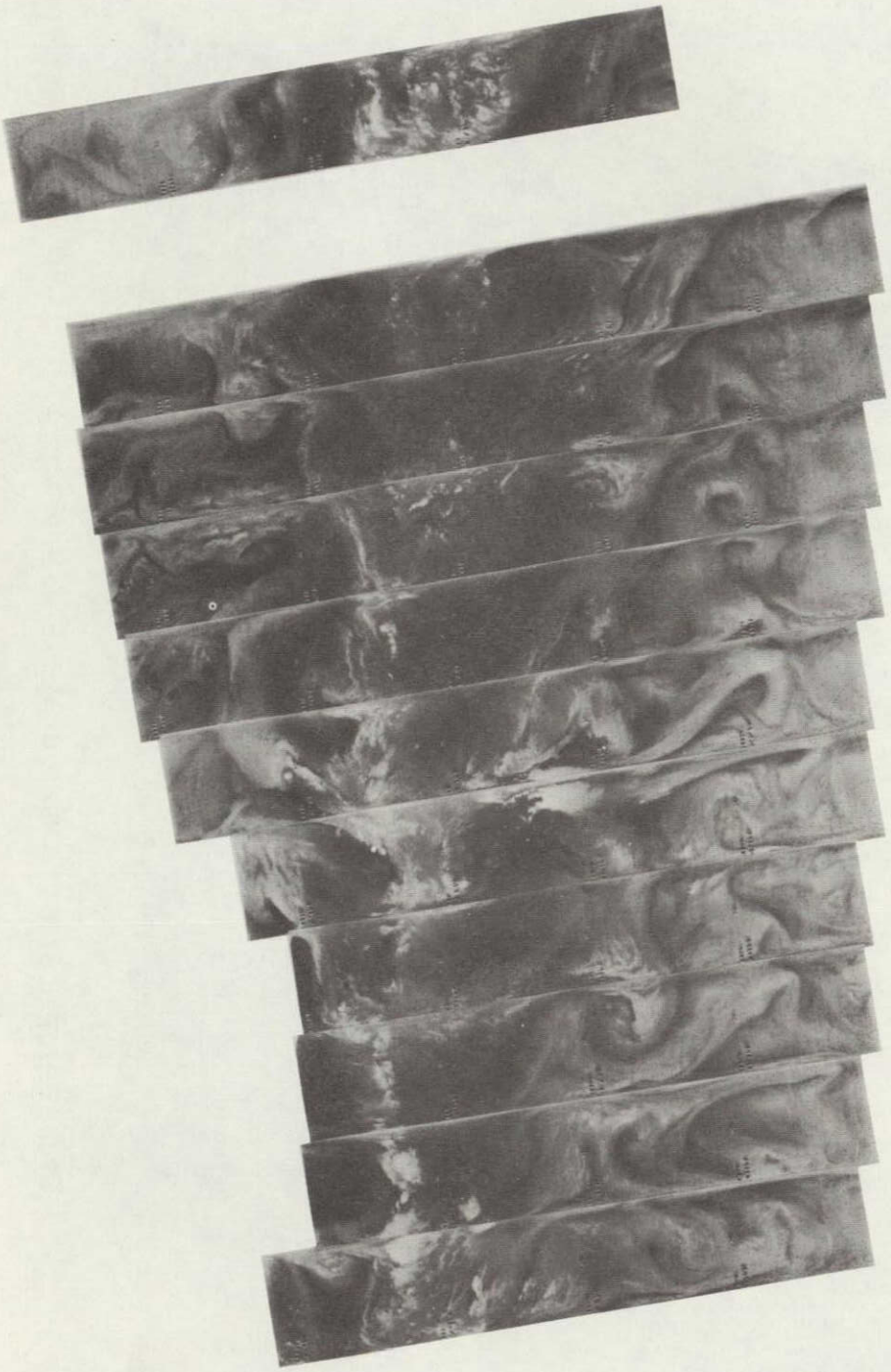
6.7μm



6708 6707 6706 6705 6704 6703 6702 6701 6700 6699 6698 6697 6696

24 OCT 76

11.5μm



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6722 6721 6720 6719 6718 6717 6716 6715 6714 6713 6712 6711 6710 6709

25 OCT 76

11.5μm

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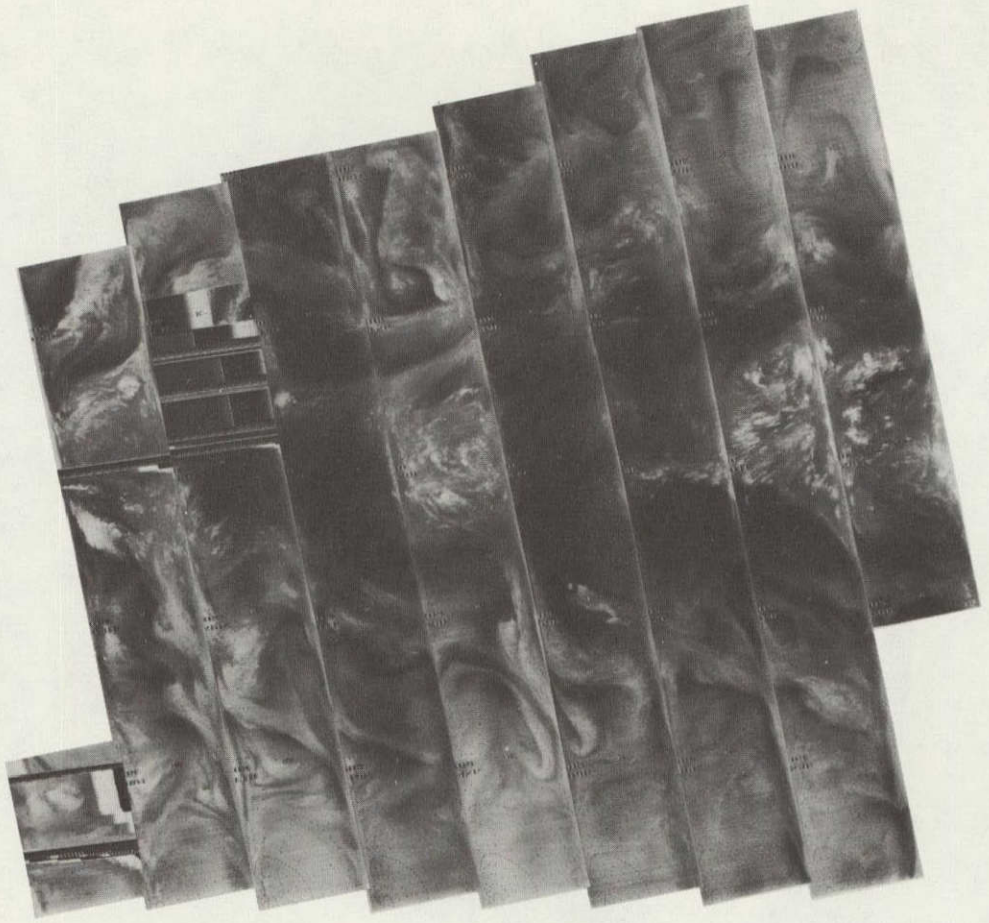

6735 6734 6733 6732 6731 6730 6729 6728 6727 6726 6725 6724 6723

26 OCT 76

6.7μm

6735 6734 6733 6732 6731 6730 6729 6728 6727 6726 6725 6724 6723

26 OCT 76

11.5μm

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SECTION 5

CORRECTIONS TO THE NIMBUS 6 USER'S GUIDE

This section presents all corrections or additions to The Nimbus 6 User's Guide, which now are known to be necessary. If additional corrections are required, they will appear in a subsequent catalog. All corrections will be carried forward cumulatively into each new catalog.

5.1 THIR Corrections to the User's Guide

The THIR mirror on Nimbus 6 rotates counter clockwise. Therefore, replace lines one through four on page 14 with the following:

> ". . . rotation is such that, when combined with the velocity vector of the satellite, a left-hand spiral results. Therefore, the mirror scans across the earth from west to east in the daytime when traveling northward, and from east to west at night when traveling southward."

The information in Figure 2-4 on page 17 is correct. However, the direction of scan is counter clockwise, and not clockwise as shown.

5.2 HIRS Corrections to the User's Guide

On page 40, Table 3-2, under "Detector Summary" change LnSe to LnSb.

The CHANNEL (and) RANGE information in the swath displays for HIRS has been changed since launch, making Table 3-5 on pages 54 and 55 in the User's Guide incorrect. The table below labeled Table 5-1 provides the correct information.

5.3 SCAMS Corrections to the User's Guide

The information contents of the image in the swath displays for SCAMS has been changed since launch, making Tables 4-5, 4-6, and 4-7 in the User's Guide incorrect. Thus, the table below labeled Table 5-2 replaces Tables 4-5 and 4-6 in the User's Guide, and the table labeled 5-3 replaces Table 4-7 in the User's Guide. All the images display the same parameters. Therefore, these new tables do not list all the possible displays, as were listed in the old Tables 4-5, 4-6, and 4-7.

On page 44, Figure 3-3, the SCAMS elements are shown with a right-to-left (clockwise) stepping pattern when looking in the direction of satellite motion. The SCAMS elements should be corrected to show a left-to-right (counterclockwise) stepping pattern.

Table 5-1
This table replaces Table 3-5 on pages 54 and 55 in The Nimbus 6 User's Guide

Table 3-5

Temperature Range of Gray Scale, and Channel of HIRS Data for each Swath on each HIRS Image Display Between Orbit 426 and 4697 (14 July 1975 through 27 May 1976)

		SWATH NUMBER									
		1	2	3	4	5	6	7	8	9	10
Coverage Period 14 July-20 July Orbits 426-513	HIRS Channel Display (channel-range)*	08-08	09-09	10-10	16-16	17-17	18-18	12-12	14-14	03-03	15-15
	Temperature Range (°K) (black to white)	300-200	290-210	260-210	310-270	100-900	0-30	290-210	260-210	240-210	280-210
Coverage Period 22 July-31 July Orbits 538-545 548-549 600-613 615-647 651-657 659	HIRS Channel Display (channel-range)*	08-08	09-09	10-10	16-16	17-17	17-17	12-12	14-14	03-03	15-15
	Temperature Range (°K) (black-white)	300-200	290-210	260-230	310-270	100-900	100-900	280-200	280-200	280-200	280-200
Coverage Period 23 July-6 Aug Orbits 546-547 553-599 614 648-650 658 660-747	HIRS Channel Display (channel-range)*	08-08	16-16	16-21	18-18	17-17	10-10	12-12	14-14	03-03	15-15
	Temperature Range (°K) (black-white)	300-200	310-270	300-200	0-30	100-900	260-230	280-200	280-200	280-200	280-200

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Table 3-5 (Continued)

		SWATH NUMBER									
		1	2	3	4	5	6	7	8	9	10
Coverage Period 7 Aug. - 27 May Orbits 748-4697	HIRS Channel Display (channel-range)*	08-08	16-16	16-21	18-18	17-17	10-10	12-12	14-14	03-03	15-15
	Temperature Range (°K) (black-white)	310-230	310-230	310-270	0-50	100-900	280-210	300-210	300-210 **	240-185	300-185 ***

*The HIRS channel number is number before the hyphen The number after the hyphen is the computer program table used to display the data from each channel as temperatures (°K) The range of temperatures displayed in each swath is given beneath each "HIRS Channel Display " The 18 steps of the scale are used to represent the division of each temperature range into 18 approximately equal temperature intervals. The central wavelength (in μm) of each channel on these displays is channel 3 = 14 4, 8 = 11.0, 9 = 8 2, 10 = 6 7, 12 = 4 52, 14 = 4 40, 15 = 4 24, 16 = 3 71, 17 = 0 61, and 18 is the temperature difference between channel 16 and channel 8. The values of channel 17-17 are albedo, represented as "counts" between 100 (blackest) and 900 (whitest). The values for 16-21 represent a second temperature range for channel 16 data Table 3-1 on page 39 of the User's Guide provides detailed spectral information and the purpose of each of the HIRS channels

**14-14 temperature range changed to 270-210 on orbit 3166A (26 January 1976)

***15-15 temperature range changed to 275-210 on orbit 3166A (26 January 1976)

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Table 5-2

This table replaces Tables 4-5 and 4-6 (on pages 79 through 81) in the Nimbus 6 User's Guide and Table 5-2 in the Nimbus 6 Data Catalog Volume 4

Table 4-5 and-6

Parameter Limits of the Gray Scale for Parameters 1, 2, 3, 5, 11, 12, and 16 on the SCAMS Image Displays between Orbits 426 and 4751 (14 July 1975 and 31 May 1976)

	Swath		1	2	3	4	5
Orbits 426 thru 1425 14 July 75 thru 26 Sept. 75	Parameter		3	2	16	11	12
	Gray Scale Value	black	280 °K	320 °K	10 °K	60 g/mm^2	1.5 g/mm^2
		white	210	100	-22	0.0	-0.1*
Orbits 1426 thru 3675 26 Sept. 75 thru 12 Mar. 76	Parameter		3	2	16	11	12
	Gray Scale Value	black	280 °K	320 °K	10 °K	60 g/mm^2	2.0 g/mm^2
		white	210	100	-22	0.0	0.0
Orbits 3676 thru 3899 12 Mar. 76 thru 29 Mar. 76	Parameter		5	2	16	11	12
	Gray Scale Value	black	240 °K	320 °K	10 °K	70 g/mm^2	2.0 g/mm^2
		white	200	100	-22	0.0	0.0
Orbits 3900 thru 3929 29 Mar. 76 thru 31 Mar. 76	Parameter		1	1	1	5	5
	Gray Scale Value	black	220 °K	265 °K	300 °K	240 °K	280 °K
		white	130	210	260	200	220
Orbits 3930 thru 4584 31 Mar. 76 thru 19 May 76	Parameter		1	1	1	2	3
	Gray Scale Value	black	220 °K	265 °K	300 °K	320 °K	280 °K
		white	130	210	260	100	220
Orbits 4585 thru 4751 19 May 76 thru 31 May 76	Parameter		1	1	1	5	3
	Gray Scale Value	black	220 °K	260 °K	290 °K	240 °K	280 °K
		white	130	200	245	180	220

*1.6 to 0.0 between orbit 426 and 477

Parameters 1, 2, 3, 5, and 16 represent uninverted antenna temperatures for channels 1 (22.24 GHz), 2 (31.65 GHz), 3 (52.85 GHz), and 5 (55.45 GHz). Parameter 16 is the temperature difference between channels 2 and 3. Parameters 11 and 12 represent inverted antenna temperatures of integrated atmospheric water vapor (channel 11) and integrated liquid water from clouds or precipitation.

Table 5-3

This table replaces Table 4-7 (on pages 82 and 83) in The Nimbus 6 User's Guide

Table 4-7

Contour Program Options used for Parameters 13, 14, and 15 on the SCAMS Image Display

Contour options	Parameters			Valid for orbits
	13 Mean temperature between 1000 mb and 500 mb	14 Mean temperature between 500 mb and 250 mb	15 Mean temperature between 250 mb and 100 mb	
Contour interval	4°K	4°K	4°K	426-851 (14 July-14 Aug 1975)
Contour thickness	1°K	1°K	1°K	
Contour interval	4°K	4°K	4°K	852-4751 (14Aug.-1975-31 May 1976)
Contour thickness	2°K	2°K	2°K	

Section 4.5.3 "Tape Format" on page 83 of the User's Guide states that each tape will have "five files, i.e., a short header file. . . and four data files, . . ." There will not be a header file on the archival tape. The sentence should be changed to read: "The tapes will be standard 9-track 1600 BPI tapes, each containing four data files, one for each of four days."

In Table 4-8 on page 80 the "Pitch error" and "Roll error" "Dimensional Units" should be changed to counts (from Deg) and the "Multiplier Used" should be changed to 1 (from 32). In the same table the "Playback orbit" should be followed by one "I*2 Spare", and then by the "Reference orbit", which should be changed to I*4 (rather than I*2). (Reference orbit = year * 100,000 + day * 100 + finish hour.) The "Dimensional Units" for the "Geopotential thicknesses" on page 85 of the same table should be changed to "°K" (from DM).

The following SCAMS information has been edited by the experimenter and briefly outlines the current status of data availability, retrieval methods, and a current table of theoretical brightness temperature values.

The SCAMS instrument operated from June 15, 1975 to May 31, 1976. The data from this experiment has been processed and can be obtained from the National Space Science Data Center at GSFC. The digital data, including instrument output, calibrated antenna temperatures, deconvolved brightness temperatures, and retrieved atmospheric

parameters, are recorded on a set of 87 9-track tapes. With three exceptions, each tape contains four contiguous days of data. Channel 1 and 2 brightness temperatures and five atmospheric parameters from these tapes have been dumped in a condensed format on microfiche. A typical fiche contains somewhat less than two days of data. Photographic images for individual orbits are also available.

At this time, the archived data represent the "first cut" at retrievals, and can be improved with respect to calibration of the oxygen band channels and inversion of the H_2O channels. Data prior to Jan. 2, 1976 was calibrated by assuming the radiometric temperatures of the calibration targets to be equal to their physical temperatures. Comparisons with radiosondes indicated that a more accurate calibration would be obtained with an offset of -1.2 K on the oxygen band target. The archived data starting with Jan. 2, 1976 incorporates this correction. Strictly speaking, the previous data should be recalibrated and reinverted, but for most purposes an adequate approximation can be obtained by simply subtracting 1° from the oxygen band antenna and brightness temperatures and the retrieved temperature profile. No correction was made to the H_2O targets, for lack of evidence that any was necessary.

All of the archived water vapor and liquid water retrievals were obtained by a linear algorithm. Improved retrievals, particularly in humid regions, can be obtained by use of the following nonlinear equations:

$$\text{vapor} \quad (\text{mm}) = 72 + 12\ \alpha$$

$$\text{liquid} \quad (\text{mm}) = 0.4\ \beta$$

where

$$\alpha = \left[7.34 \ln \left(\frac{280 - T_{01}}{280 - T_{B1}}\right) - 3.75 \ln \left(\frac{280 - T_{02}}{280 - T_{B2}}\right)\right] \cos\ \theta$$

$$\beta = \left[-3.34 \ln \left(\frac{280 - T_{01}}{280 - T_{B1}}\right) + 9.71 \ln \left(\frac{280 - T_{02}}{280 - T_{B2}}\right)\right] \cos\ \theta$$

T_{B1} and T_{B2} are the measured brightness temperatures at 22.23 and 31.65 GHz, and T_{01} and T_{02} are brightness temperatures computed for a tropical model atmosphere containing 72 mm precipitable water vapor; the latter are listed in Table 5-4 as a function of view angle θ.

The following information, describing how the antenna temperatures are computed from the SCAMS instrument digital data, should be added after SCAMS Section 4.5 of the User's Guide.

Table 5-4

Theoretical Brightness Temperatures for a Saturated Tropical Troposphere With No Clouds and a Smooth Ocean Surface (Valid for Period 2 January 1976 - 31 May 1976)

θ view angle	T_{01}	T_{02}
0	225.6	178.2
8°	225.9	177.9
17°	226.9	177.3
26°	229.2	177.5
34°	233.9	180.1
44°	242.0	187.4
53°	254.5	203.0

The following information, describing how the antenna temperatures are computed from the SCAMS instrument digital data, should be added after SCAMS Section 4.5 of the User's Guide.

4.6 Post-launch Calibration

Antenna temperatures are computed from the SCAMS Instrument digital data for each of the five channels by the equation:

$$T_A = T_{AS} + \frac{T_{AC} - T_{AS}}{d_{T_c} - d_S}(d - d_S)$$

where T_A is antenna temperature for the earth (positions 0-12), T_{AS} is the space antenna temperature (position 13), T_{AC} is the calibration target antenna temperature (position 14), d is earth data in counts, d_S is space data in counts, and d_C is calibration target data in counts. The digital data matrix is described in Table 4-2 of the Nimbus 6 User's Guide. The space calibration antenna temperature is assumed constant at 3°K for all five channels. The target antenna temperature is computed by

$$T_{AC} = T_C + T_{CO}$$

The constant offset T_{CO} is currently zero for channels 1 and 2. The target temperatures (T_C) are given by

$$T_C = a_0 + a_1 (R - R_{25}) + a_2 (R - R_{25})^2$$

where the thermistor resistances (R) are computed by

$$R = R_1 + \frac{R_2 - R_1}{d_{R2} - d_{R1}} (d_R - d_{R1})$$

and values of the other constants are listed in Table 4-9a. Note that channels 3, 4, and 5 share the same calibration target. Also listed in Table 4-9a are word numbers in the digital data matrix containing data values d_R, d_{R1}, d_{R2}, and the recent addition of the T_{CO} value for channels 3, 4, and 5.

5.4 ESMR Corrections to the User's Guide

The following are corrected equations for the ESMR Section of the User's Guide:

page 90

$$X \text{ (km)} = (636 + 10.8P = 0.32P^2)R_j$$

page 96

$$T_B = T_A - (T_A - T_C) \frac{(C - C_A)}{(C_C - C_A)}$$

page 101

$$T_{\substack{\text{Horizontal} \\ \text{True}}} = 1 + a\, T_{\substack{\text{Horizontal} \\ \text{Nominal}}} - T_{\substack{\text{Vertical} \\ \text{Nominal}}}$$

$$T_{\substack{\text{Vertical} \\ \text{True}}} = 1 + b\, T_{\substack{\text{Vertical} \\ \text{Nominal}}} - b\, T_{\substack{\text{Horizontal} \\ \text{Nominal}}}$$

page 106

$$N_j = 256 (T_{Hj} - 100) + T_{Vj} - 100$$

The following information supplements Section 5.3.2 in the User's Guide.

The display format and temperature ranges of the images in the swath displays for ESMR has been changed twice since launch. The first revision occurred after orbit 3932 in which each ESMR scan line is displayed once prior to orbit 3932 and twice after orbit 3933. Similarly, each of the 71 scan-spot elements is displayed once through orbit 3932 and twice after orbit 3933.

Table 5-5

This table accompanies Section 4.6 "Post-launch Calibration", and should be added to the end of the SCAMS section of the User's Guide

Table 4-9

Thermistor Calibration Constants
used to Calculate the SCAMS Target Temperatures

channel / constant	1	2	3,4,5
a_0	298.16		
a_1	.46485	.46535	.46814
a_2	$3.0 \cdot 10^{-5}$	$2.9 \cdot 10^{-5}$	$3.0 \cdot 10^{-5}$
R_{25}	603.75	602.98	599.71
R_1	495.6		
R_2	603.4		
d_R (word no.)	1	11	2
d_{R1}(word no.)	61		62
d_{R2}(word no.)	71		72

Table 5-6

This table replaces Table 4-9 in Section 4.6 "Post-launch Calibration" and should be added to the end of the SCAMS section of the User's Guide.

Table 4-9a

Thermistor Calibration Constants
used to Calculate the SCAMS Target Temperatures

channel / constant	1	2	3,4,5
a_0	298.16		
a_1	.46485	.46535	.46814
a_2	$3.0 \cdot 10^{-5}$	$2.9 \cdot 10^{-5}$	$3.0 \cdot 10^{-5}$
R_{25}	603.75	602.98	599.71
R_1	495.6		
R_2	603.4		
d_R (word no.)	1	11	2
d_{R1} (word no.)	61		62
d_{R2} (word no.)	71		72
T_{CO}	0		-1.2°K

Through orbit 3933 (31 March) the ESMR displays contained 20 swaths of data, as shown in the ESMR image displays up to orbit 3932 in Section 3.3. The swaths are numbered (numbers not shown) from 1 on the left to 20 on the right. Each of the ten swaths on the left has the same geographic coverage. However, each swath displays either horizontally or vertically polarized data at a temperature range as listed in Table 5-5a. The right set of ten swaths has a similar format, and displays the earliest recorded data. If the right swaths were cut and placed above the group on the left, the new display would show the continuous coverage recorded for that orbit. Swaths 1 and 11 have the same polarization and temperature range. Similarly, swaths 2 and 12, 3 and 13, etc., are the same. The tables here labeled 5-8 and 5-9 replace Table 5-5 on page 105 of the User's Guide.

As stated above, the ESMR display format was modified at orbit 3933 (31 March 1976) and again at orbit 6185 (15 September 1976). From orbit 3933 through orbit 6184, the following format was used:

The new displays contain ten swaths of data plus a geographic grid overlay for each swath, as shown in the ESMR image displays after orbit 3933 in Section 3.3, of the Nimbus 6 Data Catalog, Volume 5.

The swaths are numbered (numbers not displayed) from 1 on the left to 10 on the right. Each of the five swaths on the left has the same geographic coverage. However, each swath displays either horizontally or vertically polarized data at a temperature range as listed in Table 5-5b. The right set of five swaths has a similar format, and displays the latest recorded data. If the right swaths were cut and placed below the group on the left, the new display would show the continuous coverage of that display.

Swaths 1 and 6 display the same parameter. That is, the temperature range and polarization for swaths 1 and 6 are the same. Similarly, swaths 2 and 7, 3 and 8, 4 and 9, and 5 and 10 display the same parameters. Table 5-5b is set up to show this duplication of parameter information.

Data time (GMT) references for the left set of five swaths are shown adjacent to the vertical line at the left. Time tick marks are every five minutes with hour and minute annotation every fifteen minutes. Data time references for the right set of five swaths are shown in a similar manner adjacent to the vertical line at the right.

The center portion of the display contains two swaths of grid overlay information: the left grid for overlay on each of the five swaths on the left, and the right grid for overlay on each of the five swaths on the right. The grid longitudes are generated at ten degree intervals between 55 degrees south and 55 degrees north, and at 20 degree intervals from 55 degrees to the Poles. Latitude grids are generated every five degrees. All grid lines consist of a series of dots at one degree intervals. Latitudes are labeled at 60°S, 30°S, EQ, 30°N, and 60°N. Longitude labels are normally placed next to each latitude label.

Table 5-7
This table replaces Table 5-5 on page 105 in the User's Guide

Table 5-5

Brightness Temperature Value for each Step of the Gray Scale on ESMR Image Displays for Orbits 426 through 827 (14 July through 12 August 1975)

Gray Scale Number		Swath Number and ESMR Display Parameter									
		1 and 11 (T_H)	2 and 12 (T_V)	3 and 13 $\frac{T_H+T_V}{2}$	4 and 14 (T_H)	5 and 15 (T_V)	6 and 16 $\frac{T_H+T_V}{2}$	7 and 17 (T_H)	8 and 18 (T_V)	9 and 19 $\frac{T_H+T_V}{2}$	10 and 20 (T_V-T_H)
(black)	1	> 200			> 250			> 300			> 50
	2	196-200	same	same	246-250	same	same	296-300	same	same	46-50
	3	193-196	as	as	243-246	as	as	293-296	as	as	43-46
	4	190-193	1 and 11	1 and 11	240-243	4 and 14	4 and 14	290-293	7 and 17	7 and 17	40-43
	5	187-190			237-240			287-290			37-40
	6	184-187			234-237			284-287			34-37
	7	181-184			231-234			281-284			31-34
	8	178-181			228-231			278-281			28-31
	9	175-178			225-228			275-278			25-28
	10	171-175			221-225			271-275			21-25
	11	168-171			218-221			268-271			18-21
	12	165-168			215-218			265-268			15-18
	13	162-165			212-215			262-265			12-15
	14	159-162			209-212			259-262			09-12
	15	156-159			206-209			256-259			06-09
	16	153-156			203-206			253-256			03-06
	17	150-153			200-203			250-253			00-03
(white)	18	< 150			< 200			< 250			< 00

T_H = Brightness temperature derived from the ESMR horizontal polarization channel data

T_V = Brightness temperature derived from the ESMR vertical polarization channel data

Table 5-8
This table follows the new Table 5-7 (above), which replaced
Table 5-5 on page 105 in the User's Guide

Table 5-5a

Brightness Temperature Value for each Step of the Gray Scale on ESMR Image Displays
for Orbits 828 through 3932 (13 August 1975 through 31 March 1976)
(Brightness Temperatures are in °K)

Gray Scale Number		Swath Number and ESMR Display Parameter									
		1 and 11 (T_H)	2 and 12 (T_V)	3 and 13 $\frac{T_H+T_V}{2}$	4 and 14 (T_H)	5 and 15 (T_V)	6 and 16 $\frac{T_H+T_V}{2}$	7 and 17 (T_H)	8 and 18 (T_V)	9 and 19 $\frac{T_H+T_V}{2}$	10 and 20 (T_V-0.6T_H)
(black)	1	> 200	> 230	> 210	> 250	> 270	> 250	> 290	> 300	> 280	> 140
	2	196-200	226-230	206-210	246-250	267-270	247-250	287-290	298-300	278-280	136-140
	3	191-196	223-226	203-206	243-246	264-267	244-247	284-287	295-298	275-278	133-136
	4	187-191	219-223	199-203	239-243	261-264	241-244	281-284	293-295	273-275	129-133
	5	183-187	215-219	195-199	235-239	258-261	238-241	278-281	290-293	270-273	125-129
	6	178-183	211-215	191-195	231-235	254-258	234-238	274-278	288-290	268-270	121-125
	7	174-178	208-211	188-191	228-231	251-254	231-234	271-274	285-288	265-268	118-121
	8	169-174	204-208	184-188	224-228	248-251	228-231	268-271	283-285	263-265	114-118
	9	165-169	200-204	180-184	220-224	245-248	225-228	265-268	280-283	260-263	110-114
	10	161-165	196-200	176-180	216-220	242-245	222-225	262-265	278-280	258-260	106-110
	11	156-161	193-196	173-176	213-216	239-242	219-222	259-262	275-278	255-258	103-106
	12	152-156	189-193	169-173	209-213	236-239	216-219	256-259	273-275	253-255	99-103
	13	148-152	185-189	165-169	205-209	233-236	213-216	253-256	270-273	250-253	95-99
	14	143-148	181-185	161-165	201-205	229-233	209-213	249-253	268-270	248-250	91-95
	15	139-143	178-181	158-161	198-201	226-229	206-209	246-249	265-268	245-248	88-91
	16	134-139	174-175	154-158	194-198	223-226	203-206	243-246	263-265	243-245	84-88
	17	130-134	170-174	150-154	190-194	220-223	200-203	240-243	260-263	240-243	80-84
(white)	18	< 130	< 170	< 150	< 190	< 220	< 200	< 240	< 260	< 260	< 80

T_H = Brightness temperature derived from the ESMR horizontal polarization data

T_V = Brightness temperature derived from the ESMR vertical polarization data

Table 5-9

This table follows the new Table 5-5a (above), which replaced Table 5-5 on page 105 in the User's Guide

Table 5-5b

Brightness Temperature Value for each Step of the Gray Scale on ESMR Image Displays for Orbits 3933 through 6184 (31 March through 15 September 1976)

(Brightness Temperatures are in °K)

Gray Scale Number	Swath Number and ESMR Display Parameter				
	1 and 6 (T_H)	2 and 7 (T_H)	3 and 8 (T_H)	4 and 9 (T_V)	5 and 10 $\left(\frac{T_H + T_V}{2}\right)$
(black) 1	>200	>230	>210	>250	>270
2	196-200	226-230	206-210	246-250	267-270
3	191-196	223-226	203-206	243-246	264-267
4	187-191	219-223	199-203	239-243	261-264
5	183-187	215-219	195-199	235-239	258-261
6	178-183	211-215	191-195	231-235	254-258
7	174-178	208-211	188-191	228-231	251-254
8	169-174	204-208	184-188	224-228	248-251
9	165-169	200-204	180-184	220-224	245-248
10	161-165	196-200	176-180	216-220	242-245
11	156-161	193-196	173-176	213-216	239-242
12	152-156	189-193	169-173	209-213	236-239
13	148-152	185-189	165-169	205-209	233-236
14	143-148	181-185	161-165	201-205	229-233
15	139-143	178-181	158-161	198-201	226-229
16	134-139	174-178	154-158	194-198	223-226
17	130-134	170-174	150-154	190-194	220-223
(white) 18	<130	<170	<150	<190	<220

T_H = Brightness temperature derived from the ESMR horizontal polarization data

T_V = Brightness temperature derived from the ESMR vertical polarization data

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Table 5-10

Brightness Temperature Value for each Step of the Gray Scale on ESMR Image Displays for Orbits 6185 (15 September 1976) through the present Catalog Period

(Brightness Temperatures are in °K)

Swath Number and ESMR Display Parameter					
Gray Scale Number	1 and 6 (T_V)	2 and 7 (T_V)	3 and 8 (T_V)	4 and 9 (T_V)	5 and 10 (T_V)
(black) 1	>240	>254	>270	>280	>300
2	236-240	251-254	266-270	277-280	296-300
3	233-236	248-251	263-266	274-277	293-296
4	230-233	245-248	260-263	271-274	290-293
5	227-230	242-245	257-260	268-271	287-290
6	224-227	239-242	254-257	265-268	284-287
7	221-224	236-239	251-254	262-265	281-284
8	218-221	233-236	248-251	259-262	278-281
9	215-218	230-233	245-248	256-259	275-278
10	212-215	227-230	242-245	253-256	272-275
11	209-212	224-227	239-242	250-253	269-272
12	206-209	221-224	236-239	247-250	266-269
13	203-206	218-221	233-236	244-247	263-266
14	200-203	215-218	230-233	241-244	260-263
15	197-200	212-215	227-230	239-241	257-260
16	193-197	208-212	223-227	237-239	253-257
17	190-193	205-208	220-223	235-237	250-253
(white) 18	<190	<205	<220	<235	<250

T_V = Brightness temperature derived from the ESMR vertical polarization data

From orbit 6185 (15 September 1976) through the current data catalog period, the new ESMR image display has the following format:

Since an anomaly renders the Horizontal channel unuseable, the new ESMR format was devised to display the Vertical channel with five different temperature ranges and polarization for each individual swath. That is, the temperature range and polarization for swaths 1 and 6 are the same. Swaths 2 and 7, 3 and 8, 4 and 9, and 5 and 10 display the same parameters. Thus, four additional swaths of data are dedicated to the Vertical channel display for a total of 5 swaths as described above.

Data time (GMT) references and grid overlay information remain unchanged. Please refer to Table 5-10 for new parameter information.

5.5 ERB Corrections to the User's Guide

Post-launch calibration procedures are described below. While some numbers are for the period of this catalog, the calibration procedure is valid for all data. This information can be added as Section 6.5a to the User's Guide and would fit on page 134.

6.5a Post-launch Calibration

The observations from the wide angle channels (11 and 12), which measure the total energy (<0.2 μm to >50 μm) emitted and reflected by the earth, depend on the prelaunch calibration and pertinent instrument temperatures. Assuming unit emissivity for the target scene, the irradiance from the scene is given by,

$$H_T = [\Delta W - \epsilon_s F_s \sigma T_s^4 + \epsilon_d F_d \sigma (T_d + Kv)^4]$$

where

ΔW = effective thermopile irradiance (w m^{-2})

σ = 5.6697 x 10^{-8} w m^2 (deg. K)$^{-4}$

ϵ_s = emissivity of FOV stop = 0.965

F_s = view factor of the FOV stop = 0.18892

T_s = temperature (°K) of the FOV stop

ϵ_d = emissivity of the thermopile = 0.977

F_d = view factor of the thermopile = 0.80461

T_d = temperature (°K) of the thermopile base

K = factor relating thermopile base temperature to thermopile surface temperature = 0.0031°K per count

v = thermopile output in digital counts

The effective thermopile irradiance (ΔW) is obtained from the thermopile output (v) as follows:

$$\Delta W = a_0 (T_m) + a_1 (T_m) \cdot v$$

where

$$a_0 = C_0 + C_1 T_m,$$

and

$$a_1 = d_0 + d_1 T_m$$

are derived from prelaunch calibrations and depend on the module temperature (T_m, °C). The coefficients C_0, C_1, d_0, d_1 are given below. In calibrating channel 11 and channel 12 (W) with the FOV stop out, the quantity F_s in the equation for H_T is set to zero.

	Ch. 11	Ch. 12 (W)	Ch. 12 (N)
C_0:	9.86	10.4	8.38
C_1:	0.18358	0.23235	0.18483
d_0:	0.6042	0.6035	0.6014
d_1:	-8.254×10^{-4}	-6.109×10^{-4}	-5.879×10^{-4}

The observations from the other two wide-angle channels (13 and 14), which measure the shortwave radiation (0.2 μm to 4.0 μm), and (0.7 μm to 3.0 μm), are transformed to irradiance (H) by,

$$H = \frac{(V - V_0)}{S_T}$$

where V is the digital counts, V_0 is the offset (in counts) observed from dark FOV's, and S_T is the sensitivity (w m^{-2} $count^{-1}$) obtained from the equation: $S_T + S_0 (1+(0.01) \cdot (T-25) \cdot STC)$, where S_0 is the sensitivity at 25°C, T is the detector temperature (°C), and STC is the sensitivity temperature coefficient (percent per degree C). These constants are given below:

Ch	V_0	S	STC
13	-41	2.004	0.04
14	-44	3.989	0.03

The interpretation of digital counts (V) from the shortwave scanning channels (15-18) gives the radiance (w m^{-2} sr^{-1}) of the scene (N_s) by,

$$N = \frac{(V-V_o)}{S_T}$$

where V_o is the offset (counts) obtained during views of the internal blackbody or space. The sensitivity S_T at temperature T(°C) is obtained using the equation for S_T described above, and the constants given below.

Ch	V_o	S	STC
15	-3	3.155	0.0
16	0	3.275	0.03
17	-1	3.116	-0.01
18	15	2.963	-0.05

A series of checks on the sensitivity of these channels, using the on-board diffuse target, indicated no noticeable degradation over the July-August period of operation.

The longwave scanning channels (19-22) have had numerous inflight calibrations which have remained essentially unchanged since 3 July. The calibration coefficients, a_0 and a_1 relate digital counts (V) to the scene radiance N(w m^{-2} sr^{-1}) as follows:

$$N_s = N_m + a_0 + a_1 \cdot V$$

where N_m is the radiance of the detector module. The radiance N_s is the actual radiance measured within the spectral limits of the filter (4.5 μm to 50 μm). The calibration coefficients, obtained from inflight calibrations on 3 July, are as follows:

Ch	a_0	a_1
19	-0.82	0.09583
20	-0.60	0.10535
21	-1.26	0.10168
22	-0.29	0.10338

The deviations of these calibration coefficients as derived from inflight calibrations from 29 July to 20 August are shown in Table 6-6a. The only change which indicates a need for updating the calibration coefficients is the change in the intercept of channel 20.

Periodic checks of the electronic gains of channels 1 through 14 have shown that the electronic gains have remained within 0.5 percent of the prelaunch values, with few exceptions. Table 6-6a shows the percentage of maximum deviation in the gain ratios

Table 5-11

This table is part of the new Section 6.5a "Post-launch Calibration" to be added to the ERB section of the User's Guide

Table 6-6a

Stability of Calibration of the
ERB Longwave Scanning Channels
(between 29 July and 20 August 1975)

	Channel 19		Channel 20		Channel 21		Channel 22	
Date	Δa_o	Δa_1	Δa_o	Δa_1	Δa_o	Δa_1	Δa_o	Δa_1
7/29	-0.07	-0.4	1.12	0.5	-0.07	-0.4	0.36	-0.3
8/5	0.50	-0.3	1.22	0.1	0.08	-0.3	0.11	-0.2
8/8	0.68	-0.4	1.33	0.1	0.04	-0.2	-0.003	-0.1
8/12	-0.06	-0.2	0.74	-0.4	-0.09	-0.3	0.17	-0.2
8/17	0.69	-0.3	1.49	0.2	0.20	-0.3	0.16	-0.2
8/20	-0.22	-0.3	1.53	0.2	0.04	-0.2	0.13	-0.4

Δa_o = change in intercept (w m^{-2} sr^{-1})

$$= (a_o)_{current} - (a_o)_{7/3/75}$$

Δa_1 = change in slope (% w m^{-2} sr^{-1} ct^{-1})

$$= \frac{[(a_1)_{current} - (a_1)_{7/3/75}]}{(a_1)_{7/3/75}} \times 100$$

Table 5-12

This table is part of the new Section 6.5a "Post-launch Calibration" to be added to the ERB section of the User's Guide

Table 6-6b

Percentage Change of the Maximum Deviation in the Gain Ratio between Post-launch and Prelaunch Gain Values for ERB channels 1 through 14 (20 June and 17 August 1975)

Ch	G_{0-39}	G_{30-60}	G_{60-90}
1	-0.2	0.2	-0.1
2	0.1	-0.3	-6.5
3	±0.1	-0.1	-0.2
4	±0.1	-0.2	-0.1
5	±0.1	-0.2	0.2
6	2.6	1.8	-2.1
7	1.3	2.1	-0.6
8	1.6	1.3	-0.9
9	0.4	-0.6	±0.1
10	0.7	-0.5	±0.2
11	-0.4	0.3	0.4
12	0.2	-0.2	0.4
13	-0.3	0.2	0.3
14	+0.2	-0.1	0.3

(current/prelaunch) for the three steps in the calibration staircase voltage. The 6.5 percent change in the high-level gain of channel 2 and the gain changes in channels 6, 7, and 8 are believed to be caused by radio-frequency interference with the electronic calibration circuit and is neither a real change in the electronic gain nor nonlinearities of the channels.

Table 6-7, the ERB Compacted Archival Tape Format, on pages 136 through 139 of the User's Guide, should be changed as follows:

Directory Record (Page 136)

Delete last line of section A which reads:

"135-340	Zero fill	1"

and add the following:

135-149	Orbital Elements	
135	Day of Epoch	1
136	Year of Epoch	1
137	Hours	1
138	Minutes (including fraction)	100
139	Eccentricity	10^5
140	Argument of Perigee (integer part)	1
141	Argument of Perigee (fraction part)	10^3
142	Right Ascension (integer part)	1
143	Right Ascension (fraction part)	10^3
144	Inclination (integer part)	1
145	Inclination (fraction part)	10^3
146	Semimajor Axis (km, integer part)	1
147	Semimajor Axis (km, fraction part)	10^3
148	Mean Anomaly (integer part)	1
149	Mean Anomaly (fraction part)	10^3
150	Sun-Earth Distance (A. U.)	10^4
151-340	Zero fill	1

Orbital Summary Record (Page 139)

Delete last line of table, which reads:

17-340	Zero fill	1"

and add the following:

17-26	Solar Irradiances (Chs. 1-10) Normalized to mean sun-earth distance	Chs. 1-5:10 Chs. 6-10:100
27	Solar Channels Assembly Gamma Angle (positive to right of track)	1
28=340	Zero fill	1

5.6 LRIR Corrections to the User's Guide

Table 5-13

Post-launch analysis of relative spectral response data and orbital data leads to the following corrected values for Table 7-2, on page 154 of the User's Guide

Table 7-2

Optical Characteristics of LRIR Channels

Channel		Band Pass (50% Peak Response)	Field-of-view (km)		Random noise in orbit* $\pm 1\sigma$(watts/m^2-sr)
No.	Abbrev.		Vertical	Horizontal	
1	NCO_2	649-672 cm^{-1} (14.9-15.4 μm)	2.0	20	0.0023
2	BCO_2	592-700 cm^{-1} (14.3-16.9 μm)	2.0	20	0.0040
3	O_3	984-1169 cm^{-1} (8.6-10.2 μm)	2.0	20	0.011
4	H_2O	412-446 cm^{-1} (22.4-24.3 μm)	2.5	25	0.008

*Noise will gradually increase as the detector temperature increases during the useful life of the experiment.

5.7 PMR Corrections to the User's Guide

There are no PMR corrections to the User's Guide.

5.8 TWERLE Corrections to the User's Guide

Table 5-14

The following are address changes to Table 9-2
on page 186 in the User's Guide

Table 9-2

Nimbus RAMS Experiments - Address Changes

Address Changes

OLD	NEW
Mr. G. R. Cresswell Division of Fisheries & Oceanography Commonwealth Scientific & Industrial Research Organization Melbourne, Australia	Mr. G. R. Cresswell Division of Fisheries & Oceanography CSIRO P. O. Box 21 Cronulla, N. S. W. 2230 Australia
A. J. Dyer CSIRO P. O. Box 77 Mordialloc, Vic 3195 Australia	Dr. A. J. Dyer Division of Atmospheric Physics CSIRO Station Street ASPENDALE 3195 Victoria, Australia
Professor Pierre Lacombe, Director Laboratory d'Oceanographic Museau Historie Naturelle de Paris 43 Rue Cuvier Paris, France	Professor Pierre Lacombe, Director Laboratoire d'Oceanographie Physique Museum National d'Histoire Naturelle 43-45 Rue Cuvier 75005 Paris, France
Professor P. Tchernia Museum d'Historie Naturelle de Paris 43 Rue Cuvier Paris, France	Professor P. Tchernia Laboratoire d'Oceanographie Physique Museum National d'Histoire Naturelle 43-45 Rue Cuvier 75005 Paris, France

Table 9-2 (Continued)

Dr. Norbert Untersteiner, Program Director Project AIDJEX 4059 Roosevelt Wave, N. E. Seattle, WA 98105	Dr. Norbert Untersteiner AIDJEX Coordinator University of Washington 4059 Roosevelt Way, N. E. Seattle, Washington 98105
Dr. Donald V. Hansen, Director Physical Oceanography AOWL NOAA U. S. Department of Commerce Miami, Florida	Dr. Donald V. Hansen, Director Physical Oceanography Laboratory AOML/NOAA 15 Rickenbacker Causeway Virginia Key Miami, Florida 33149
Vincent E. Lally National Center for Atmospheric Research P. O. Box 1470 Boulder, Colordao 80302	Mr. Vincent E. Lally National Center for Atmospheric Research P. O. Box 3000 Boulder, Colorado 80302
J. Lentfer Wildlife Research U. S. Department of Interior 813 D. Street Anchorage, Alaska	Mr. Jack W. Lentfer Fish and Wildlife Service Department of Interior 4454 Business Park Blvd. Anchorage, Alaska 99503
H. Brann Bureau of Meteorology Melbourne, Victoria Australia	Mr. H. N. Brann Bureau of Meteorology P. O. Box 1289K Melbourne, Victoria 3001 Australia
Robert Kee Development Engineering Division Code 6201 U. S. Naval Oceanographic Office Washington, D. C. 20390	Mr. Robert Kee Code 6220 U. S. Naval Oceanographic Office Washington, D. C. 20373

Table 9-2 (Concluded)

F. Anderson South African Council for Scientific & Industrial Research Congella, Natal, South Africa	Mr. Frank P. Anderson CSIR, Institute for Technology P. O. Box 17001 Congella 4013 South Africa
H. Stommel Professor of Oceanography MIT Cambridge, Massachusetts	Professor Henry Stommel Department of Meteorology Room 54-1416 Massachusetts Institute of Technology Cambridge, Massachusetts 02139
B. Buck Polar Research Lab. Santa Barbara California 93101	Mr. B. M. Buck, President Polar Research Laboratory, Inc. 123 Santa Barbara Street Santa Barbara, California 93101
John A. Knauss Graduate School of Oceanography University of Rhode Island Kingston, Rhode Island 02881	Dr. P. L. Richardson Woods Hole Ocean Institute Woods Hole, Massachusetts 02543

5.9 T&DRE Corrections to the User's Guide

There are no T&DRE corrections to the User's Guide.

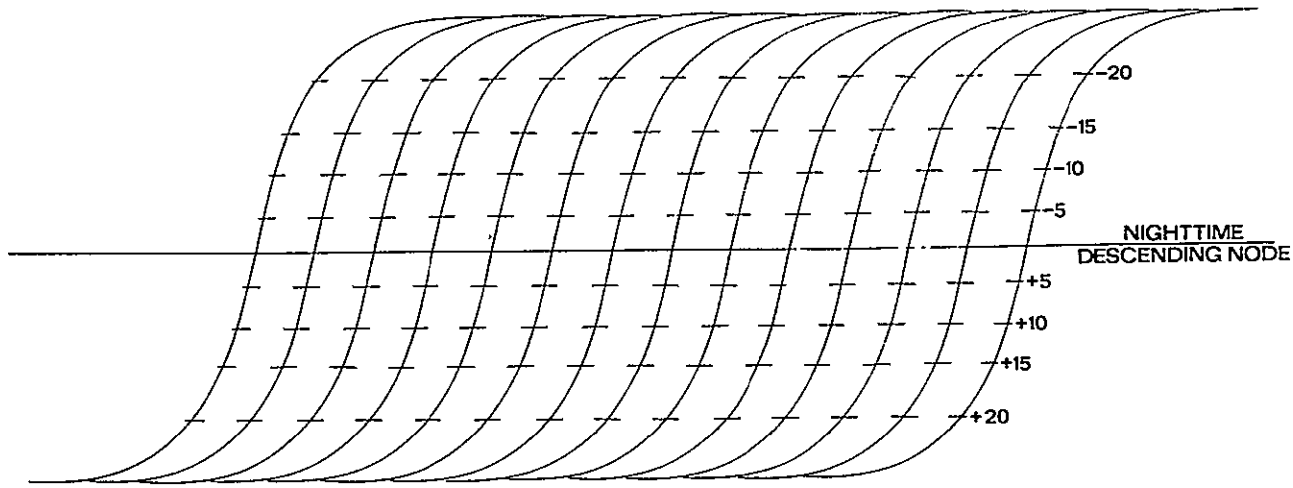
Table 5-15

The following are new TWERLE users, added since launch.
This information should be added to Table 9-2
(Nimbus RAMS Experiments) on page 186 in the User's Guide.

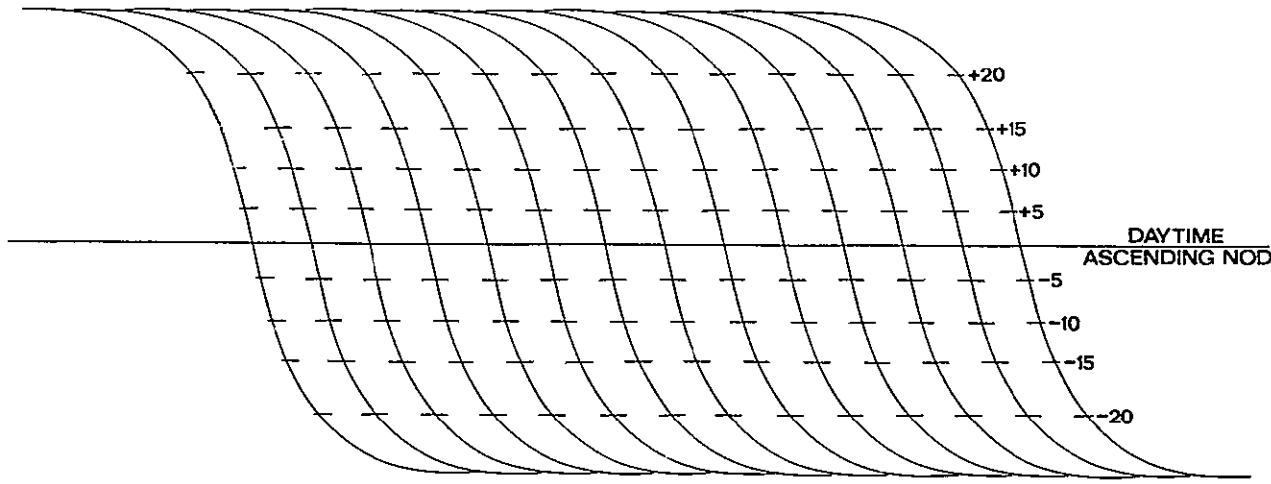
Principal Investigator	Experiment Title	Platform		
		Number	Type	Deployment Area
Dr A. D Kirwan, Jr. Department of Oceanography College of Geosciences Texas A & M University College Station, Texas 77843	Anomaly Dynamics Study (ADS)	32	Drifting Buoys	North Pacific
Mr David F Thomas, Jr SATD-MEB-SDS, Mail Stop 322 NASA Langley Research Center Hampton, Virginia 23665	Air-droppable In Situ Platforms for Long Duration Measurements near Hurricanes	10	Ocean Platforms	Western Atlantic near North America
Dr. P Roger Williamson Department of Applied Physics & Information Science University of California – San Diego La Jolla, California 92037	Stratospheric Monitoring with Longterm Balloon Flights	3	Super-pressure Balloons	Southern Hemisphere
Mr J C O'Rourke Canadian Marine Drilling Ltd P O Box 200 Calgary, Canada T2P 2H8	Arctic Ice Dynamics	2-4	Sea Ice Platforms	Beaufort Sea
Dr J Michael Hall NOAA Data Buoy Office National Space Tech Office Bay St Louis, Mississippi 39520	East Coast Drifting Experiment	24	Drifting Buoys	Atlantic Ocean
	High Impact Detection and Determination on Large Buoys	10	Buoy	Atlantic Ocean, Gulf of Mexico, & North Pacific Ocean
	Reliability Enhancement Experiment	3	Buoy	Santa Barbara, California & Arctic Ocean
Mr Robert Oehlkers University of Wisconsin Space Science and Engineering Center 1225 W. Dayton St. Madison, Wisconsin 53706	Buoy Experiments in Lake Michigan	10	Buoy	Lake Michigan

Table 5-15 (Continued)

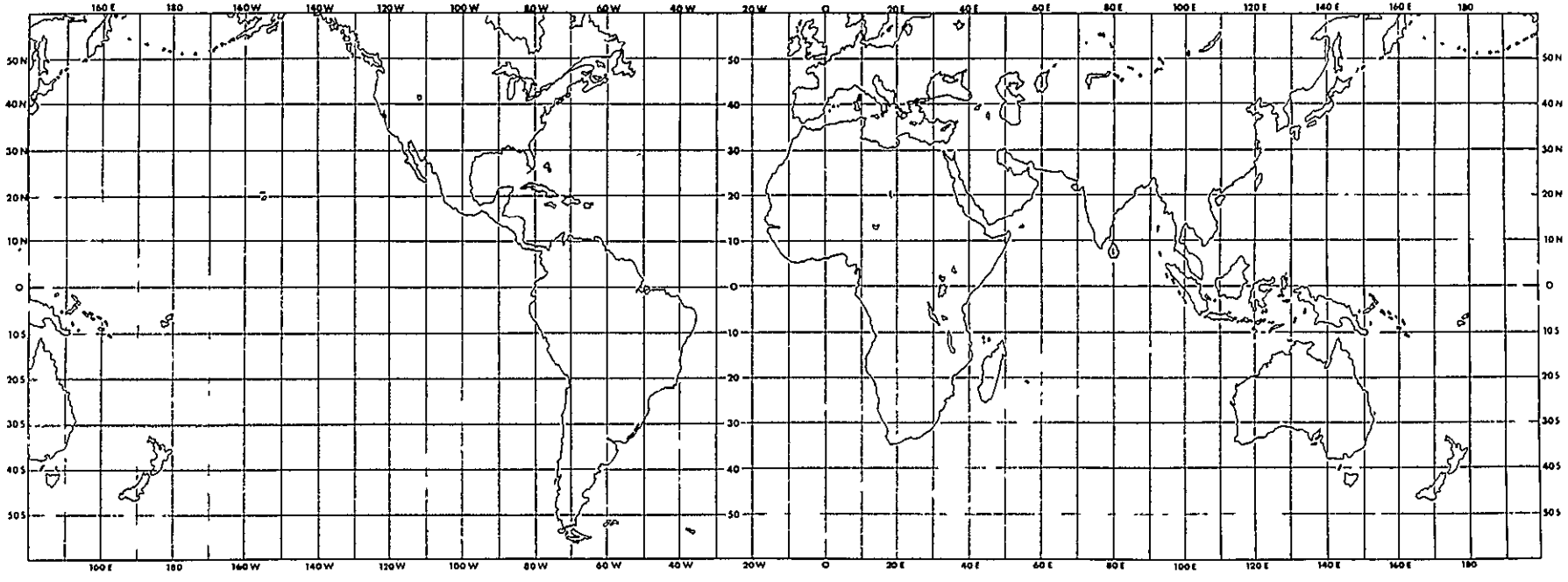
Capt E. A Delaney USCG Oceanographic Unit Bldg 159E Navy Yard Navy Yard Annex Washington, D.C. 20590	North Atlantic and Labrador Current Studies	1	Drifting Buoys	North Atlantic, Labrador Coast
Dr. R. H. Goodman Innovative Ventures, Ltd. 4632 11th St. Calgary Alberta, Canada T2E2W7	Ice Monitoring in the Canadian Arctic and Labrador Region	2	Drifting Buoys	Canadian Arctic, Labrador
Dr. D. Halpern NOAA Pacific Marine Env. Labs. Univ. Washington WB10 Seattle, Washington 98195	Ocean Circulation Studies and Pacific Equatorial Waters	3	Drifting Buoys, Moored Buoys	Mid-Pacific Equatorial



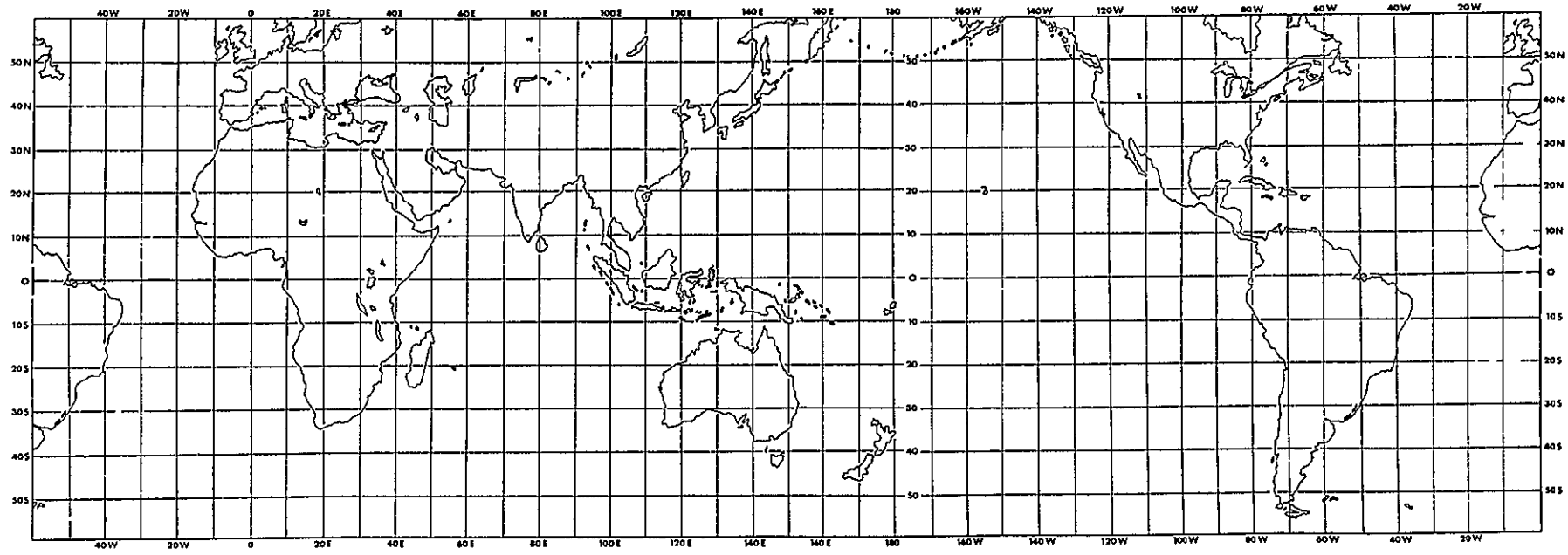
NIMBUS SUBSATELLITE TRACKS OVERLAY



NIMBUS SUBSATELLITE TRACKS OVERLAY



Location Guide
Average Scale for Nimbus
THIR Daytime Montages



LOCATION GUIDE
AVERAGE SCALE FOR NIMBUS
THIR NIGHTTIME MONTAGES